THE

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Editorials.

VETERINARY SURGEONS AND THE CORONATION.

THAT most loyal and faithful body of His Majesty's subjects, the Veterinary Surgeons of Great Britain and Ireland, are naturally anxious to be officially represented at the Coronation of the King in June next. Accordingly the President of the Royal College of Veterinary Surgeons wrote to the Earl Marshal asking him for permission to send a representative, and requesting that a place be reserved for him at the ceremony. It will gratify the readers of the JOURNAL to learn that the Earl Marshal, the Duke of Norfolk, has graciously replied to Mr. Lawson acknowledging receipt of his application, and stating that he will endeavour to reserve a place at the Coronation ceremonies for the representative of the Veterinary profession.

ON FILIAL DUTY.

IF in this editorial I seem to strike a personal note, I trust my readers will admit that it is, so to speak, as a representative person, a type rather than an individual, that I harp once more on an old string. Another excuse is this: although I do not imagine that all the readers of the VETERINARY JOURNAL are old students of this College, and although therefore I cannot claim the privilege of saluting them all as fathers, brethren, or intellectual offspring, yet I am sure that a good many of them belong to that category. I speak to them first, and I trust my words will not be lost on the remainder, but will find an echo in many a heart and conscience.

Amongst other incidents and results of the war in South Africa there has been one which has caused me considerable embarrassment and no little pain. Very frequently within the last year I have received inquiries from the War Office authorities and others as to the character and ability of Mr. So-and-so, who has applied to them for a post and referred them to the Principal of the College where he was educated. Now this is just as it ought to be in the case of young men who left College last year or the year

before, and have not had much opportunity of founding a reputation; in such a case it is the duty of a Principal to state frankly his opinion of the applicant, and that Principal will esteem it a privilege and a happiness if he can truthfully say that the applicant is just such a person as the Government wants. As a rule, no reference to books or prize lists is required; the very name conjures up at once the fresh young face full of eager hope and enthusiasm, and the whole career of the young man from the days of the thoughtless rattle of the chemistry or botany class to the grave seriousness of the class of surgery and clinical medicine, stands boldly outlined against the fading past. But it is quite otherwise when a reference to the College is given by a pupil who left us seven, eight, even ten years ago. In the first place, one wonders why the candidate rendered his case so suspicious by referring a possible employer to an authority so far remote in time and perhaps also in space. The natural course is to give reference to present or recent employers, or to persons of high rank or social status in one's neighbourhood; to leave a huge gaping interval between College days and the present year of grace is not quite creditable. I find to my regret that it is always these sorely beset men whom it is most difficult to befriend. They have seldom had a brilliant College career; their personalities did not make any strong impression on me; they came forth from the mist of the unknown, they did their work, they gained their diplomas, and they disappeared once more into the unknown. All that one can do is to examine the College books and report what is recorded therein, in the hope that the record may be found satisfactory. Now it does not follow that a student who has been ten years away from College should be practically a stranger to the Principal and Professors. We are most anxious to keep in touch with our old students and follow their careers, and indeed it is with the design of enforcing this lesson and bringing it home to the minds of old pupils that I have written this editorial. There are various means of maintaining old College connections; first, there is the simple means of physical contact, brought about by paying a visit to the College every time the old pupil is in town. If visits to Edinburgh are rare,—and they need not be, for Edinburgh, according to the guide-books, has one or two more attractions than the New Veterinary College,—yet even then there is His Majesty's Post-Office, which conveys four ounces of written or printed matter for a penny; there is the parcel post, which conveys interesting specimens up to 11 lbs. avoirdupois for a shilling; and there is for important and urgent matters the telegraph. Why do not old students send me more frequently reports of cases? The pages of the JOURNAL are always open for these if they are of general interest, and the compressibility and consequent elasticity of a magazine are quite wonderful. If the old pupils of the New Veterinary College will but do

as I suggest, they will achieve more results than one: in the first place, they will keep their individuality fresh and clear before the minds of their old teachers—including, of course, myself—so that when a particular man is wanted for a post we may all join in recommending Mr. Blank as the very man for the purpose of the Government; in the second place, they will keep their own knowledge deeper and purer, and their own reasoning powers more acute and brilliant, by putting them to the test of friendly criticism on the part of their fellows; and lastly, they will have the satisfaction of contributing, however little, to the store of scientific knowledge and increasing the sum of human happiness. I trust I shall not have appealed in vain.

ADVANCE OR RETREAT?

THIS is not a bellicose editorial, in spite of its heading, nor is it a criticism of the action of our Government. It is not even aggressive, but rather, indeed, defensive, as upholding the *status quo.* At the special meeting of the Royal College held on the 11th April Professor Dewar moved a resolution to the effect that "a certificate of having attended the courses in botany and zoology, chemistry and physiology, prescribed for students of medicine in any of the Universities of the United Kingdom, shall qualify the holder to be examined in the subject to which the certificate applies for the Diploma of the R.C.V.S." Professor Dewar's motion appeared innocent enough, and was of course quite honestly intended, but it was none the less dangerous, and we are glad to say it was defeated by a large majority. Let us examine this proposal carefully, and we shall presently see its weakness. Professor Dewar seems to think that Veterinary Colleges are on the same footing as our Universities, and he would treat students presenting certificates from other bodies in the same way as the Universities treat the pupils of extramural lecturers. But there is a very considerable difference. First, there is the financial or economic difference, which we dare not neglect, seeing that we left the Garden of Eden a very long time ago. The Universities are powerful corporations with large endowments and classes crowded to overflowing. They allow extramural teachers to gather up the crumbs that fall from their tables, and generally—and quite naturally—take care that they themselves are fully fed before they allow even crumbs to be carried outside. If their classes began to fall off seriously, doubtless their generosity to the extramural teachers would diminish and eventually disappear; as it is, they take precautions to induce, and even compel, students to attend the Professors' classes, so that the external teachers tend to become either mere coaches or the chosen guides of ardent young men who are not satisfied with the scanty and often insipid fare provided at the University by a

drowsy Professor, but wish to know their subject thoroughly and not empirically. Now what is our position? Veterinary Colleges have few endowments or none, and the total number of veterinary students in the country is very small as compared with medical and science students, and if we allow this small body of students to distribute itself over a wide surface, the number who will come to the Veterinary Colleges for scientific instruction will be quite negligible. The question for Principals of Veterinary Colleges will then be,—Can we maintain classes in botany, chemistry, zoology, and physiology for a mere driblet of students? It would be idle to answer that teachers may be engaged or not, just as the number of intending students is large or small—we might say existent or non-existent—for it is not a matter of an extra teacher or two to cope with a sudden increase in numbers. Our classes are never so large as to necessitate the presence of more than one teacher, and if that one teacher's existence is threatened, or his tenure of office rendered precarious, there will be no continuity, and we may as well decide at once to close the classes. Let it be further noted that when such a calamity occurs the examiners of the Royal College will have to examine, not according to a standard set by the Royal College, but according to the standard set and the methods adopted by the Universities: they will become the servants of the Universities, their examination will become a farce, a mere hollow pretence, and the Royal College will find itself driven to the logical necessity of accepting not only certificates of attendance, but certificates of passing examinations for a degree at a University. Let this be kept steadily in view in all future discussions. Then there is the scientific difficulty urged by Professor MacFadyean. Will any man in his sober senses tell us that the ordinary teaching of botany at a University fulfils all the needs, supplies all the wants, of a veterinary surgeon? What about the relative values of the various feeding-stuffs; what about the effect of drugs as administered to the diverse internal economies of the horse, ox, pig, and sheep? A hundred such questions will present themselves to the minds of our readers, and the answers will be very difficult to find. But botany and chemistry are to a certain extent of common application. Can the same be said of physiology? Surely the question has only to be asked in order to be treated with disdain and contempt. Yet Professor Dewar calmly proposes what is in effect the abandonment of veterinary individuality. He seems unable to perceive that when once we have handed over the teaching of these subjects to University Professors we have abdicated our position altogether. Nothing will be left but surgery and clinical medicine, and then, if veterinary science exists at all as a separate entity, it will be absorbed into some University curriculum, degrees will be conferred by the Senates of the Universities, on which, perhaps, one veterinary surgeon may have an impotent and purely ornamental seat, and the Royal College will become an effete body, a thing of the past.

THE CANCER COMMITTEE.

A SERIOUS mistake, amounting in our opinion to a grave indiscretion, has been made in the appointment of the Executive Committee on Cancer. This is to consist of Members of the Royal College of Surgeons, the Royal College of Physicians, the Royal Society, the Royal Veterinary College (London), with members from the Dick College of Edinburgh and the Dublin Veterinary College. The last-mentioned College has not yet produced a single graduate; but let that pass, as, if mere schools are to be represented, it is right that Ireland should have a place. But in that case what becomes of the claims of the other schools, which are older, hold Royal Charters, have turned out hundreds of distinguished graduates, and can claim to be at least equally representative of Scotland? This is sufficiently serious, but it sinks into minor importance when we consider the slight implied by the exclusion of all reference to the Royal College of Veterinary Surgeons. Surely this was the body that ought to have been asked to appoint a representative or representatives to take seats upon the Committee. The Royal College is the official body which legislates for and controls the veterinary profession, and it, and it only, as we think, ought to have been consulted. Had this been done, we may be sure that the most competent men in the profession would have been appointed to the Committee; at any rate we should all have bowed to the decision of the Royal College, and there would have been no jealousy or discontent. The whole profession would at least have felt satisfied that its legitimate claims and aspirations had been respected. As it is, every veterinary surgeon in the country must be smarting under the indignity. The selection that has been made is most unfortunate, because it is so invidious. Under an appearance of equal justice to the three countries, it implies—innocently, we of course believe—a grave injustice to one of them. We do not say that the best men have not been appointed, but there is no assurance that they have, and even if the selection were the best possible, the means taken to that end must be held to be extremely unfortunate. Is there no chance of a revision?

NEW VETERINARY LITERATURE.

WE have received the first number of a journal styling itself the *Provincial Veterinary Quarterly*, which is published at Manchester by the Western Publishing Company, and is edited by John Howard, who writes after his name—we presume with authority—the honoured title M.R.C.V.S. We cannot understand how Mr. Howard managed to scrape through his preliminary examination in Latin, for he takes as the heading of his journal the following

horrible barbarity, "Pro bono de multi, non pro bono de pauci," and as his motto, "Juvamus naturæ per scientiæ." We do not expect our readers to believe this: we should not ourselves, if anybody else told us that a member of our Corporation had printed such a monstrosity—but it is true all the same, and we are going to keep our copy of this amazing production under glass in our museum as a *lusus naturæ*. An Edinburgh newspaper some years ago, when administering a well-deserved castigation to a foolish citizen, who had presumed to occupy a public place for which he was utterly unqualified, said, "This man ought not to sit on a School Board; he ought to sit in a Board School." We do most sincerely wish that Mr. John Howard would, if it is too late to go back to school, at any rate get a schoolboy to write his Latin for him. We fear that Mr. Howard would receive a terrible caning if he ventured to present his specimen of Latinity to any of the junior masters, and we should like to be that master.

As specimens of minor atrocities we find the following. A section of the *Provincial Veterinary Quarterly* is devoted to "Original Discoveries in Veterinary Science." Just think of that, intelligent reader, and learn that these Discoveries (with a big D) include gall-stones in a mare, tetanus in cattle, and other wonderful things that you never heard of. Well, the first of these is attributed to J. Howard, and the second and third have the word "*Ibid.*" after them, which of course is short for "*Ibidem*," and means "in the same place." We find ourselves in a quandary, not feeling quite sure whether J. Howard is a man or a place. Some time ago a waggish journalist suggested that Mr. Andrew Lang was a syndicate. We wish this clever fellow would tell us what J. Howard is. Further down we find papers by Howardus Johannem, who is, we fear, J. Howard in another form—his Latin is so incurably bad—and by gentlemen rejoicing in names like Artemus Tertius, Senius Veterinus (Oh, shades of Virgil!), Agricola (who is not a farmer, but a vet. surgeon), and so on; indeed the mantle of J. Howard seems to have fallen upon and overspread all his contributors. Pending the investigations of that newspaper chap, we suggest that perhaps J. Howard is a slip for J. Howard, Limited, there is such a fell purpose in his (its) slaughter of the innocent Latin language. On page 1 we find the phrase "hoc genus omne" not only dragged in by the hair of the head, but mutilated by the addition of the word "in"; on page 18 we find the choice phrase "infra dign*um*," and to crown all we have on page 19 "ignoramii." This is actually sublime. It will really not surprise us if the versatile firm should publish next month a "Latin grammar on a new and improved system." After this it seems poor fun to mention the use of such an ugly hybrid word as "uteralgia" for "hysteralgia," or the extraordinary combination "an original contribution de novo"; if it is original, how is "de novo" applicable? One delicious phrase we must give to our readers. On page 18 we read,

"Many times have we seen animals, doomed to destruction as incurable, painfully dragging their deceased bodies about a pasture." There is a gruesome horror about the "deceased bodies," which is really worthy of Dante.

We have greatly enjoyed the reading of this new magazine, which we recommend to our own readers when they are depressed. It is much better fun than *Punch*, and only wants a few good illustrations to make it absolutely irresistible. We should greatly like to see Harry Furniss or E. J. Reed giving us his pictorial presentment of the "one man" (on page 28), who "elected to lead the storm" in May 1887. Of course that heroic personage was J. Howard, and the heroes of Crecy and Agincourt are simply nowhere beside him. Page 28 is a splendid specimen of rhodomontade, and ought to be read by all lovers of that style of writing. If we could restrain our laughter, and take pity on Shakespeare and Cuvier, who find themselves misquoted, Cæsar, who finds himself placed forty years too far forward in history, and Professor Cossar Ewart, whose very existence is doubted, like the famous Mrs. Harris, we would say that the whole thing is a medley of pedantry, turgidity, and vanity, as deserving of tears as it is of laughter.

Royal College of Veterinary Surgeons.

A QUARTERLY MEETING of Council was held at 10 Red Lion Square, London, W.C., on Friday afternoon, the 11th inst.—Mr. Alexander Lawson, President, in the chair.

The following Members of Council were present:—Vet.-Colonel Lambert, Professors Dewar, M'Call, M'I. M'Call, M'Fadyean, Mettam, Penberthy, W. O. Williams. Messrs. Abson, Allen, Bower, Carter, Dollar, Fraser, Hartley, Locke, M'Kinna, Shipley, Junior, Simpson, Trigger, Villar, Wartnaby, Wragg, Thatcher (Solicitor), and Hill (Secretary).

On the motion of Professor Williams, seconded by Mr. Fraser, the minutes of the last meeting were taken as read, and confirmed.

The SECRETARY announced that Messrs Abson, Barrett, and Cope had written regretting their inability to attend the meeting.

A letter was read from Mr. W. H. Bloye, confirming his resignation of the examinership in Class A, and explaining that he had taken this step in order to become a candidate for the post rendered vacant by the resignation of Mr. Malcolm.

The SECRETARY read a letter from Mr. Malcolm acknowledging the resolution appreciative of his service passed by the Council at their last meeting.

A letter was read from the Under-Secretary of State in which it was stated that Mr. Ritchie was unable to modify the revised scale of fees which had been forwarded in a letter previously received from the Home Department, and adding that the revised scale would come into force on the 1st of April next.

Mr. VILLAR said it would be remembered that the fees offered were

most inadequate, inasmuch as the one given for the examination of an animal, including attendance to give evidence on the same day in the police courts, was 10s. 6d. Also if two animals are separately examined at the same time, and evidence was given in respect to each of them on separate charges, the fee in the second case was 7s. 6d., and for each one after the second, 5s. He felt that Mr. Ritchie's decision should not be received without some kind of protest. It was absurd for a veterinary surgeon to give a whole day of his time for 10s. It was inadequate remuneration for skilled evidence, and was about the price a plumber would obtain for his work. He proposed that the Secretary be instructed to acknowledge the receipt of the letter, respectfully protest against the decision at which Mr. Ritchie had arrived, and again point out to him that the fees were altogether inadequate. He should have mentioned that the scale referred to the Metropolitan police district.

Mr. SIMPSON, in seconding the motion, thought it was better that the protest should be entered at the outset rather than to wait until a case arose where there was a grievance. A case had recently arisen in connection with the Derbyshire Quarter Sessions, in which a fee of only 3s. 6d. was allowed to a veterinary surgeon, and it became necessary to take some steps to try and get it altered.

The resolution was put and carried unanimously.

The SECRETARY read a letter from Professor E. Ray Lankester, Director of the British Museum (Natural History), in which the writer, after stating that he was giving serious attention to the development of the collections in the Museum illustrative of breeds of domesticated animals, and expressing the opinion that it was of great importance that record specimens of important breeds should be preserved, asked whether the Royal College of Veterinary Surgeons would consider the question of presenting the skeleton of "Eclipse," which was in their possession, to the trustees of the British Museum. If he obtained "Eclipse" as the starting-point of such a series he thought he would be able to obtain other celebrated skeletons.

The President had requested him to acknowledge the letter, and to say that he could hold out no hope that the skeleton would be handed over to the Museum.

In reply to the President's letter Professor Ray Lankester had again written, stating that the previous suggestion was an important development of the collections in the Museum, showing the great breeds of horses, cattle, &c., and stating that he attached very great importance to the acquisition of "Eclipse" as enabling him to go on with the plans of securing records of the great breeds for preservation. He hoped the College would help him in giving national representation and interest to their field of work.

Mr. SIMPSON proposed that the action of the President should be confirmed.

Mr. WRAGG, in seconding the motion, called attention to the very dirty and dusty state of the skeleton. He suggested that the Museum Committee should visit the Museum and remedy the state of affairs.

Mr. VILLAR suggested that when the skeleton of Eclipse had been cleaned up it would be a good plan if the letters of Professor Lankester were attached to the inside of the case, because in time to come perhaps the genuineness of the skeleton would be questioned, and the letters would be an argument that their skeleton was the original.

Professor METTAM also drew attention to the state of the Museum, and thought it was more a place in which to set potatoes than anything else. Was the Museum Committee ornamental or useful?

Mr. CARTER said he was a member of the Museum Committee, but up to the present time it had been an ornamental institution.

The PRESIDENT thought the Secretary should call a meeting of the Museum Committee on the first opportunity.

The resolution confirming the President's action was carried unanimously.

A letter was read from Messrs. Horsburgh and Brydon in reference to Principal Williams' Memorial, stating that at the general meeting of subscribers to the Memorial held in Edinburgh on the 19th March it was resolved that a portion of the funds subscribed should be applied to the painting of a portrait of the late Principal Williams, to be presented to the Royal College of Veterinary Surgeons, to be hung in the Council-Chamber, and requesting that the decision of the Council with reference to the acceptance of the portrait should be given on the first opportunity.

In a subsequent letter from Messrs. Horsburgh and Brydon, dated the 8th April, it was stated that the Committee of the Memorial were very desirous of increasing the fund by another £50 or so in order to enable them the better to carry out the project, and stating that they would be very glad to hear from Members of the Council or their friends who would be willing to give a subscription or increase their former subscription.

On the motion of Mr. WRAGG, seconded by Mr LOCKE, the Council acceded to the request that the portrait of the late Principal Williams should be hung in the Council-Chamber, the Secretary stating in reply to an inquiry by Mr. Locke that the measurements of the portrait of the late Principal Williams would be in accordance with the portraits already hung in the Chamber.

The SECRETARY read a letter from the Royal Institute of Public Health informing the College that it was proposed to have in connection with the Congress of the Institute in August, to be held at Exeter, a section for veterinary surgeons, and inviting the co-operation of the College with them in the matter.

Mr. M'KINNA said he had been fortunate in attending several such Congresses, and thought they were one of the best means of keeping in touch with municipal life. The profession was thereby brought more into public importance than on most occasions. He had heard that sometimes a slight had been cast on the profession in such Congresses, through resolutions which had been passed at the veterinary section being brought up at the final meeting too late in the day for discussion. To a certain extent they were themselves to blame. At the last Congress at Aberdeen he called the attention of the Secretary of the Congress to the fact, and he said he would undertake to see that any suggestions in future were carried out. He moved that a delegate representing the profession be sent to the Congress, and that it be left in the hands of the President either to go himself or send a representative.

Mr. SIMPSON, in seconding the motion, said that veterinary surgeons were apt to grumble at times if they were not invited to take part in such discussions, and when they had an opportunity of meeting the members of a sister profession and others he thought it should be embraced.

The resolution was carried unanimously, the Chairman stating in his

reply to questions by Messrs. Villar and Wragg that a guinea would be subscribed towards the funds, and that the expenses of the delegate attending the meeting would not be paid.

Mr. SIMPSON stated that in the daily papers the important heading "The Cancer Inquiry, its cause and treatment" appeared. A committee was nominated, consisting of certain representatives of different bodies, and amongst others a member was to be elected to serve upon that committee from what was called "The Royal Veterinary College." Was it intended that the appointment should be by the Royal College of Veterinary Surgeons or by the Royal Veterinary College?

Mr. SHIPLEY said he thought the announcement was to the effect that there was to be a representative from the Royal Veterinary College in England, the Royal Veterinary College in Scotland, and the Royal Veterinary College in Ireland, and a nominee from the Council of the Royal College of Veterinary Surgeons.

Mr. SIMPSON said that was not so. Professor M'FADYEAN asked what *prima facie* evidence Mr. Simpson possessed that those who drew up the notice had any misconception as to the body referred to as the Royal Veterinary College, London. It did not seem to him to be an outrageous supposition that the promoters should really have intended to allow the Royal Veterinary College to nominate somebody.

Professor WILLIAMS said that after reading the announcement he called upon the secretary of the inquiry, and asked him how it was that three veterinary colleges had been selected out of five. He stated that one was selected to represent England, one to represent Scotland, and one to represent Ireland, and that the three colleges selected were the three senior colleges of the three countries, that the three representatives were only appointed to the general committee, and had nothing to do with the Cancer inquiry, that the investigation would be carried out by men appointed by the executive committee, and that he had no doubt the executive would appoint the best men to carry out the investigation.

OBITUARY.

The SECRETARY read the obituary list.

Mr. TRIGGER asked if the obituary list read was that for the last three months.

The SECRETARY replied in the affirmative.

Mr. TRIGGER said there was at least one death in the list which occurred as far back as May last year.

Mr. WARTNABY said there was one death reported which to his knowledge occurred twenty years ago.

In reply to a queston by Professor Penberthy as to what evidence of death the Secretary acted upon,

The SECRETARY stated that in some cases he obtained a certificate from the Registrar. In other cases, where letters and voting papers were returned, the matter was brought before the committee which ordered him to send the usual notices—two notices and a registered letter. Some of these notices came back with the announcement "No address" or "Deceased," and when they were "Deceased" he was entitled under the Act to strike them of the register.

Mr. DEWAR referred to the death of Mr. Charles MacGregor, who

had given his life for his country in South Africa. He was shot through both knees, recovered, and was again on active service when he fell a victim to enteric.

Mr. CARTER having drawn attention to the imperfect condition of the register, stating that he had discovered at least twenty-six names which were wrong in the Register for 1902, the Council adjourned for a short time, during which two photographs of the members were taken, one in the Council Chamber, and the other in the entrance of the building in Red Lion Square.

PRESENTATIONS TO THE LIBRARY.

The SECRETARY announced the following presentations to the Library:—three months of "The Veterinarian," three months of "The Veterinary Journal," "The Journal of Comparative Pathology and Therapeutics," a bound volume of the "Veterinary Record," 1901-2, "The Calendar of the Pharmaceutical Society," and a text-book of "Operative Veterinary Surgery," by the late Dr. George Fleming, C.B.

On the motion of Mr. SIMPSON, seconded by Mr. LOCKE, a vote of thanks was accorded to the donors.

FINANCE COMMITTEE.

Mr. TRIGGER read the Report of the Finance Committee, and moved its adoption. The Report stated that the vouchers and receipts for payment for the preceding quarter were examined and found correct. The quarterly statement of the Treasurer had been submitted, showing a balance of £125 : 10 : 7. The Committee recommended that the present liabilities be discharged, and that the Treasurer be asked to arrange with Professor Mettam for a fixed sum to be allowed students proceeding from Ireland to the examinations.

Mr. LOCKE seconded the motion, which was agreed to.

REGISTRATION COMMITTEE.

Mr. SIMPSON read the Report of the Registration Committee, and moved its adoption. The Committee recommended that the name of a gentleman who was struck off the Register a year ago for conduct disgraceful in a professional respect, with an intimation that his name would be restored if no further complaint was made against him, be restored to the Register. They also recommended prosecutions in certain cases against unqualified persons, in one case recommending that the prosecution do not take place if an undertaking be given within fourteen days. In the case of a complaint against a member for advertising, the Committee found there was no evidence of publication of the circular complained of since the passing of the Bye-law. Cautionary notices were directed to be issued in some cases. In the case of a complaint made by one member against another for endeavouring to obtain an official position already occupied by him, the Committee recommended that both complainant and defendant appear, and that the complainant be separately represented, and his costs, if successful, paid by the College.

Mr. WARTNABY seconded the motion.

Mr. DOLLAR wished to draw attention to a serious omission from the Report, and if necessary to move an amendment. It was known to a very large number of the members that some nine months ago a complaint was

made against a certain member of the profession of having issued a circular dealing with the price of medicines and other matters, which, had it been issued after the passing of Bye-law 113, would undoubtedly have been an offence. The member complained of was communicated with; he admitted the publication of the circular, not saying anything as to the date on which it was issued. He afterwards demanded a public trial, which the Committee claimed to have assigned to him, and on that basis remarks were made concerning the proceedings in the public press. The case having thus obtained publicity, there was no reason for any longer concealing the name of the person against whom the accusation was made—Mr. Banham. Mr. Banham acknowledged the issue of the circular, and placed himself at the disposal of the Committee, offering to attend before them when they desired his presence. They called on him to attend, and he attended at a meeting of the Committee. At that time it was proved that the case against him entirely broke down, because it was impossible to prove at what date the circular had been issued. Mr. Banham to his mind very rightly refused to supply the Committee with a piece of information which they certainly ought to have provided themselves with before taking any action against him. However, the Committee saw right, almost unanimously—he believed he was the only person who dissented from their action—to refuse to dismiss the case, although he thought it was a matter of common knowledge that the information was an anonymous one.

Mr. SIMPSON.—No.

Mr. DOLLAR contended it was sent to the Chairman of the Registration Committee, who brought it before the Committee.

Mr. SIMPSON said that was incorrect, and asked Mr. Dollar to withdraw his assertion.

Mr. DOLLAR believed that the Chairman of the Registration Committee, if he did not immediately bring it before the Committee, handed it to the Solicitor.

Mr. SIMPSON said that Mr. Dollar was incorrect in his statement.

Mr. DOLLAR said he would modify his statement, and say that the pamphlet passed through the hands of the Chairman; he did not think the Chairman would deny that.

Mr. SIMPSON said the pamphlet referred to was in the hands of every member who attended the indignation meeting, and that no use was made by him of the circular.

Mr. DOLLAR said that did not disprove his point; he understood the Chairman of the Registration Committee did not dispute the truth of the statement he made when he said it passed through his hands.

Mr. SIMPSON thought the statement made by Mr. Dollar was that he (Mr. Simpson) handed it to the solicitor. That he denied, and he called upon Mr. Dollar to withdraw the statement.

The PRESIDENT thought Mr. Dollar ought to withdraw.

Mr. DOLLAR said he had no wish to impute such a statement if it was denied by the Chairman of the Registration Committee, and after what Mr. Simpson had stated he would modify the statement by saying that it passed through the hands of the Chairman of the Registration Committee. When the case before the Registration Committee failed, and they were in the position of having a person before them against whom an anonymous communication had been made, and against whom they had no grounds for further proceedings, they refused to dismiss the case, as he asked might

be done, and gave instructions to the solicitor that another solicitor should be instructed.

Mr. THATCHER said that that was not so.

Mr. DOLLAR stated that in any event another solicitor was instructed.

Mr. SIMPSON protested against such inaccuracies and insinuations, and hoped the President would protect the members from Mr. Dollar's attacks.

Mr. DOLLAR thought he was entirely within his right in endeavouring to draw attention to the matter, and believed he was absolutely correct in saying that another solicitor was instructed to collect information or to inquire into the case.

Mr. THATCHER said that was on his own responsibility.

Mr. DOLLAR thought that did not make the least difference.

Mr. SIMPSON said that Mr. Dollar stated they were instructed.

Mr. DOLLAR contended that the solicitor was the servant of the Council, and whatever he did the Council was responsible for; if he was instructed by the Committee, the Committee was responsible for his acts. The real point of importance was that for six months after it was impossible for the Committee to proceed further with their action against Mr. Banham they kept the charge hanging over his head, and had been incurring expenses with the object of finding some evidence against him. ("No"). At the last meeting of the Registration Committee it was finally reported that no such evidence could be obtained, and the Registration Committee tardily and ungraciously dismissed the case, and when he asked that some reparation should be made, refused his request. He thought a very great injustice had been done, and a greater injustice that day in bringing the Report of the Registration Committee before them, because he could not help feeling that if it was true that Mr. Banham was afforded a public trial and the matter was allowed to become public, it should at least have formed a portion of the report that the charge rested on no secure foundation, and that the Committee had at its last meeting concluded there was, so far as could be ascertained, no basis for further proceeding about him. If his name was so publicly mentioned and bandied about at the time the charge was made, it should be made equally clear that he had been acquitted. From the point of view of equity he thought it was a matter for great regret that the person who originated an unjust charge which could not be substantiated, and knowingly spread it, could not be brought to the bar of the College. He begged to move the following amendment:—"That a statement be incorporated in the Report of the Registration Committee stating that the charge against Mr. Banham made on such and such a day has been investigated by the Committee, and the Committee find there is no ground for proceeding further in the matter."

Professor PENBERTHY said he was inclined to second the proposition if Mr. Dollar could put him in possession of certain facts. Had the Council or Committee ever published the name of Mr. Banham in association with the charge?

Mr. DOLLAR in reply said that Mr. Banham asked for a public trial, and the Registration Committee having declared on many occasions that he was accorded a public trial, and having admitted to the trial two persons who were not members of the Committee, that was ample publication in the legal sense.

Professor PENBERTHY said he would have seconded the amendment if there was any evidence that the Council had made Mr. Banham's name public, but he did not see any such evidence.

Mr. DOLLAR said that Professor Penberthy might not see any evidence, but if—(Order, order)—a public trial was not publication—(Order, order)—he thought he must begin once more to learn the meaning of the English language.—(Hear, hear.)

Mr. DOLLAR'S amendment not being seconded it fell to the ground.

The original motion for the adoption of the Report of the Registration Committee was then put and carried, Mr. Dollar voting against.

On the motion of Mr. SIMPSON, seconded by Mr. FRASER, the authority of the Council was given for the prosecution of certain persons referred to in the Report, and the name of John Watkins Hopkin restored to the Register.

EXAMINATION COMMITTEE.

The SECRETARY read the Report of the Examination Committee, held on April 10th, which stated that the meeting was adjourned till 10.30 the following morning. The reports of the examiners, together with the examiners' and delegates' reports, were read, and the Committee recommended :—(1.) With regard to Class A they do not at present see their way to recommend to the Council that any alteration be made in the existing regulations. (2.) With regard to the B examination, the Secretary was instructed to write to Professor M'Fadyean stating that a complaint had been received from the Examiners in Stable Management that at the last examination they had been very much intruded upon by three tutors while taking the examinations, and that a copy of the letter be forwarded. (3.) With regard to Class D or final examination, the Secretary was instructed to see in future horses be obtained showing pronounced lameness, also that no horses be shod with either leathers or pads. The Secretary submitted a letter, together with books, from the Welsh Intermediate Examining Board, the Committee recommending that the subject should be brought before the Council for consideration. Each student's certificate was carefully examined according to the list submitted, and all passed without exception. The Secretary read the Report of the Walley Memorial Prize, together with the Chairman's letters, and the Committee recommended that no alterations be made in the existing regulations. The subject of the amount to be given to the successful candidates in the competition was discussed, and it was recommended that the amount of the year's proceeds of the fund, £7 : 4 : 4, be sent to the successful candidate, Mr. J. F. Craig.

Professor M'CALL moved the adoption of the Report.

Professor M'FADYEAN wished to refer to one item of the Report. For ten years or more the relationship between the staff at the Royal Veterinary College and the examiners of the Council had been absolutely harmonious, and for the first time a jarring note in that harmony had been struck. He referred to the complaint made by some of the examiners in Class B that three gentlemen referred to as college tutors intruded at the examination in Stable Management. The Examination Committee had recommended that a written communication on the subject should be addressed to himself, and he thought it was right he should offer some explanation to the Council on the matter. It was as well to recognise that the "tutors" were members of the teaching staff at the Royal Veterinary College, and as a matter of fact were associated with the duty of imparting knowledge regarding stable management to the members of Class B; they were on the same footing in that respect as if they were called professors. He had always

understood it was with the approval of the Council that the accredited tutors at the various colleges were allowed to be present at the examinations. If he had been under any misapprehension with regard to that point, he hoped the Council would take an early opportunity of putting the whole of the tutors right, because it was generally understood that although the tutors had not a right to be present, they were allowed to be present with the full approval of the Council. It might be within recollection that a little unpleasantness arose in connection with the examination in stable management last summer; a large proportion of students were rejected, and the complaint was freely made by the students themselves that they were examined outside the syllabus. It being part of his duty to do all he could to get the students at the Royal Veterinary College through their examinations, he afterwards thought it his duty to say to the tutors who taught on these subjects—You will be good enough to attend as closely as possible to the examination in stable management, in order that you may make yourselves conversant with the lines of the examination, and teach on those lines. That was the extent to which the gentlemen intruded at the examination; they were there by his express request, and solely with the object he had explained to the Council. He thought it would have contributed to the maintenance of the good feeling between tutors and examiners if those gentlemen, when they felt they had a cause of complaint, had come to him instead of asking that he should be approached and in a measure censured through the medium of the Council.

Mr. LOCKE thought it was quite right that the tutors should be present at the examinations, but from what the examiners said the tutors were not present at the examination, but were there while the examiners were considering the marks of the students. The examiners did not object to the tutors being present, but when the examination was over they thought they ought to retire and allow the examiners to confer together with regard to the marks.

Professor M'FADYEAN thought that in fairness the full charge had better be stated in the letter to be written to him, and he promised to bring the matter before the Council again. In the meanwhile he felt entitled to say that he believed the facts were not as stated.

Professor METTAM brought forward an application from the Welsh Intermediate Examining Boards for their examinations to be recognised by the Council as fulfilling all their requirements with regard to the General Knowledge Examination. It might be ruled out of order on the ground that notice should have been given, but it was felt at the meeting of the Examination Committee that it would be a pity to hang up the question for three months.

On the advice of the Solicitor, the President ruled that the matter being connected with the change of a bye-law, three months' notice would have to be given.

Professor WILLIAMS asked if it was legal to adjourn a committee meeting without giving notice of the renewed meeting to the members who were not present at the adjournment. He further asked if it was legal to call a meeting for 4·30, not to hold it, and then subsequently to bring forward resolutions unknown to those who were not present. That had happened in the case of the meeting of the Examination Committee.

The PRESIDENT explained that the meeting was held, and was adjourned at twenty minutes to seven on account of the lateness of the hour.

Professor METTAM stated that when the committee adjourned at half-past six more than half its work had to be undertaken, so that it was adjourned until half-past ten in the morning. He hoped Professor Williams would not think they took advantage of his absence.

Professor WILLIAMS not being satisfied with the explanation, and asking for the solicitor's ruling, Mr. THATCHER said that if the meeting was held on the day, and the persons present agreed to adjourn to the next day, not being able to complete the business, they could do so.

Mr. TRIGGER seconded the motion for the adoption of the report of the Examination Committee, which was then put and agreed to.

APPOINTMENT OF EXAMINERS FOR MEMBERSHIP EXAMINATION.

The following four gentlemen had been nominated in the place of Mr. W. Harvey Bloye as examiner in Class A, Anatomy of Domesticated Animals —W. Robb, E. F. De Jong, J. M'Lauchlan Young, and W. Cargill Patrick. A ballot was taken with the following results:—Robb, 16; De Jong, 4; Patrick, 2; Young, 0.

The PRESIDENT declared Mr. Robb elected.

CLASS D.

Mr. W. HARVEY BLOYE was nominated to fill the post vacated by Mr. John Malcolm.

On the motion of Mr. TRIGGER, seconded by Professor M'FADYEAN, Mr. Bloye was unanimously elected examiner in Class D.

APPOINTMENT OF SCRUTINEERS.

On the motion of Mr. TRIGGER, seconded by Mr. VILLAR, it was agreed that the twelve gentlemen who were selected to act as scrutineers last year be asked to serve again, and that in the event of any of them not being able to do so, the President be asked to fill the vacancies.

Mr. WRAGG voted against the motion.

ANNUAL DINNER.

On the motion of Mr. WRAGG, seconded by Mr. SIMPSON, it was resolved that the usual annual dinner should be held.

ELECTION OF AN HONORARY ASSOCIATE.

Professor W. O. WILLIAMS moved "That Mr. Hutcheon, M.R.C.V.S., principal veterinary adviser to the Government of the Cape of Good Hope, be elected an Honorary Associate of the Royal College of Veterinary Surgeons, as a mark of recognition of the valuable work he has done in and for the South African Colonies." In doing so he said:—

"With respect to Mr. Hutcheon's work in Cape Colony, he won his spurs there in 1881 in connection with the eradication of a very virulent and infectious form of pleuro-pneumonia in Angora goats, which was introduced by some Angora goats which were imported from Asia Minor in December 1880. I may mention he had to carry out the whole of the work in connection with the entire suppression of that disease single-handed, without the sympathy or support of the Government, and with very little assistance from the farmers themselves. He was only new to the colony,

and could not expect to obtain the confidence of either the Government or the public.

"He first conducted a series of experiments to test the value of inoculation as a preventive, and, after proving its efficacy, he commenced tentatively to inoculate infected flocks. Finding that fairly successful, he commenced to inoculate clean flocks in immediate danger of infection. From that he started and inoculated a belt of flocks round the infected area, and within a period of less than eight months he personally inoculated over 64,000 goats. By this means he succeeded in contracting the disease to within a very small area. His success up to that point enabled him to obtain the sanction of the Government promptly to slaughter any flocks of goats, which had not been inoculated, in which the disease appeared. Three flocks only had to be dealt with in that manner, and one flock of inoculated goats in which the disease reappeared after the disease had ceased in all other flocks for some months. The disease has not reappeared in South Africa. In connection with this matter I may be permitted to mention that the Angora farmers, in recognition of the value of his services on that occasion, gave him a public dinner, at which they presented him with a gold watch and chain, a large gold cup, and a valuable binocular microscope. Parliament also voted him £100 bonus, accompanied by many flattering speeches.

"In 1883 he first came into contact with "red-water" in cattle, "Texas fever." But although he recognised the conditions under which it was spread, and devised very effective measures for arresting its progress through the colony in a southward direction, it was not until Professors Smith and Kilborne had discovered its originating cause and its means of transmission by ticks that they were able to deal intelligently with that disease, so that I claim no credit for that discovery for Mr. Hutcheon. He, however, did a good deal of useful work in connection with its prevention and cure.

"In 1884 he investigated and discovered the originating cause of a peculiar and fatal form of paralysis in cattle, which prevailed in the territory of Griqualand West and many other districts of the colony. The Dutch call it "Lamziekte" Limpsickness. Its orginating cause is a deficiency of phosphates in the food, causing a softened condition of the bones, accompanied by congestion of the membranes of the spinal cord and an effusion of a serous fluid into the spinal canal. Mr. Hutcheon's opinion respecting the nature of the disease was strongly opposed at first, but by a series of feeding experiments and the artificial supply of bone meal to stock he was able to demonstrate conclusively that a supply of phosphates artificially was an effective means of preventing the disease, and this method is now generally adopted by all intelligent farmers.

"In 1884-5 he first demonstrated that the South African horse sickness was not anthrax, and that the malarial biliary fever of horses, which had been previously described as the biliary form of horse sickness, was perfectly distinct from that disease, and readily amenable to treatment, very few cases dying when treated as he had recommended. About the same time he investigated the nature of a disease of goats prevalent over a large area of the Karoo. It is a form of cerebro-spinal meningitis, induced by the animals eating a certain plant. The plant was subsequently discovered by a farmer named Weyer, and he verifies the discovery by a series of experiments conducted by members of the veterinary staff.

"During 1886-87 he was engaged in travelling through the principal Dutch districts of the colony with his microscope demonstrating to the farmers that scab in sheep and goats and mange in other farm animals was really due to acari, and that it could be cured by effective dipping. It was in 1887 that the first limited Scab Act was passed.

"During these years Mr. Hutcheon also dosed some tens of thousands of sheep and goats for *Strongylus contortus* in the fourth stomach, and found an efficient remedy in sulphate of copper when carefully and properly administered.

"During the same years he conducted a series of experiments on ostriches for the destruction of that small worm which invests their stomachs in such myriads, called the *Strongylus Douglassii*, and found an effective remedy in the administration first of paraffin oil, followed by carbolic acid.

"There are many other diseases which Mr. Hutcheon has differentiated and devised preventive and remedial treatment for, but I have said enough to indicate that Mr. Hutcheon has spent a busy life, always working for the interests of his clients, the colonial farmers.

"From 1896-98 he had to direct and control the campaign against rinderpest, first in carrying out the stamping-out method in the British Protectorate and Bechuanaland, also in a portion of Griqualand West. By this means they kept the disease out of the Cape Colony proper until Koch discovered his bile method. This was tried first, and after many mistakes and misunderstandings had been corrected in the field, it was largely adopted. Then followed the methods of Drs. Dangy and Bordet, the intravenous injection of defibrinated immune blood accompanied by exposure to infection. Dr. Edington's glycerinated bile was also largely used, followed by an injection of a small dose of virulent blood. His method is now largely used, but without the virulent blood. Drs. Turner and Rolle introduced fortified serum, which was very successfully used over a large area during the latter outbreaks. The experience since gained enables them now to use any of these methods much more effectively than they did at first, and they no longer dread the disease in South Africa.

"I may just add that Mr. Hutcheon has not only written on the treatment of all the stock diseases in South Africa through the medium of the *Cape Agricultural Journal*, but has written a large number of articles on the breeding and management of stock and collaterial subjects."

Mr. FRASER, in seconding the resolution, said he had known Mr. Hutcheon for over thirty years, and there were few men in the profession of whom he entertained a higher opinion than he did of him. He endorsed all that Professor Williams had said of his scientific attainments and achievements in South Africa. But he wished to refer to another side of his character. It had come to his notice not long ago, from people who lived in the colony, that there was not a man more highly esteemed, and whose opinion carried more weight in matters connected with the welfare of the country, than Mr. Hutcheon. He had also been in practice in this country, in several parts of England, and in one part of Ireland, and he knew from his own knowledge that everywhere he had been he had raised the profession in the esteem of those with whom he came in contact. As a profession he felt they were greatly indebted to him, and if they could do anything to acknowledge their indebtedness it should be their pleasure to do so.

The resolution was put and carried unanimously, the President saying he was very pleased the resolution had been passed, as Mr. Hutcheon was a very suitable man for the honour.

OTHER BUSINESS.

Mr. M'KINNA asked whether the President had been asked to take any part in the Coronation ceremonies, and whether the profession was to be represented.

The PRESIDENT replied in the negative.

Mr. SIMPSON asked whether any communication had been received from the War Office in reference to a new warrant which had been issued in connection with Army Veterinary Department.

The SECRETARY replied in the negative.

Mr. SIMPSON said it would be within the recollection of the Council that they had moved in the direction of obtaining proper recognition of the members of the Army Veterinary Department, and amongst other things they desired to see carried out was a more rapid promotion of the officers and the abolition of the prefix to the title. Letters had been received from the War Office promising to give consideration to the matter, and a deputation from the Council had waited upon the Under-Secretary of State, Lord Stanley. Although Lord Stanley received the deputation as a minister should do, he did not hold out any great hope that the prefix would be removed, and rather suggested that there was not much in the question so long as the officers received other considerations, which in his opinion were of more value. It was pointed out that the department felt very strongly upon the matter, because it was the only department in the army in which the prefix existed, combatant rank now being accorded to the medical officer down to the schoolmaster. He could not help thinking that to a very great extent it was in consequence of the steps which the Council took some time ago that alterations had taken place for the unquestionable benefit of the Army Veterinary Department, particularly in the direction of more rapid promotion. In the daily papers of a few days previously a copy had appeared of the Royal Warrant connected with the Veterinary Department. In it he thought the questions of pay and promotion were fairly dealt with, although not to the extent he would have liked, but it was hardly likely the War Office would have done what they had done if it had not been for the Council's action. That being so, he thought the promises which were held out to them with regard to what was done in the matter should have been communicated by the War Office to the College. The War Office had promised in letters that certain things should be done, yet the first intimation of their action was received through the daily paper. He had urged upon the Council from time to time the advisability of persevering with regard to the titles. Was the veterinary profession to stand alone? Why should the veterinary profession be earmarked in such a manner? Why should every department of the army have combatant rank and the veterinary profession not? So long as the medical profession held combatant rank, so long he hoped the veterinary profession would persevere in their endeavour to get what he believed were their rights in connection with the Army Veterinary Department. He moved, "That a letter be written from this College in the name of the President of the Council calling the attention of the Minister for War to the fact that no additional communicatiion has yet been received by this

Council in answer to their request, both by letter and deputation, with regard to the abolition of the prefix to the title of the Army Veterinary Department officers."

Professor PENBERTHY seconded the motion, which was carried unanimously.

Professor DEWAR called attention to the subject mentioned in the letter he sent to the President read at the January meeting, namely, that the time had come when he was justified in asking the Council to remit to the Examination Committee to consider and report to the Council the synopses of the subjects dealt with in the register as required for the professional examination. Various syllabuses drawn up ten years ago had served their purpose exceedingly well, but they had got more imperfect as the years passed by. He therefore moved, "That the Council remit the subject to the Examination Committee for consideration, and that the Committee report to the Council."

Professor METTAM seconded the motion, which was agreed to, seven voting for and one against.

Professor DEWAR further proposed, "That the Secretary be asked to instruct the various Principals of the Colleges to make suggestions in regard to these various syllabuses, so that the Committee may consider them."

Professor M'FADYEAN said the various Principals were members of the Council and of the Examination Committee, and he did not know why the onus of making suggestions for the tearing up of the syllabus should be thrown on them. He thought Professor Dewar attached an enormously exaggerated importance to the syllabuses; he did not think it was possible to draw up a syllabus which examiners could not contravise if they had a mind to. The great thing was to have reasonably minded examiners.

Professor WILLIAMS said he was of opinion that the syllabuses were sufficient for their purposes at present.

(The subject dropped,)

This concluded the business of the Ordinary Meeting of Council.

A Special Meeting of Council was held immediately following the Ordinary Meeting.

Mr. Alexander Lawson, President, occupied the Chair, and the following members were present: — Veterinary-Colonel Lambert, Professors Dewar, M'Call, M'I. M'Call, M'Fadyean, Mettam, Penberthy, W. O. Williams, Messrs. Abson, Allen, Bower, Carter, Dollar, Fraser, Hartley, Locke, M'Kinna, Shipley, Junior, Simpson, Trigger, Villar, Wartnaby, Wragg, Thatcher (Solicitor), and Hiil (Secretary).

ALTERATIONS OF BYE-LAWS.

Professor DEWAR moved the following resolution, of which he had given notice:—"That, notwithstanding anything contained in the preceding Bye-laws, a certificate of having attended the courses in Botany and Zoology, Chemistry and Physiology, prescribed for students of medicine in any of the Universities of the United Kingdom, shall qualify the holder to be examined in the subject to which the certificate applies for the Diploma of the Royal College of Veterinary Surgeons."

In doing so he said there was not the slightest doubt that the veterinary profession was very much behind its sister profession in regard to the

matters dealt with in the resolution. There was not a profession except their own which insisted upon the classes being taught within their own institutions, as the veterinary profession did. It was not necessary to assume that what he asked the Council to adopt was traversed by anything which existed in the bye-laws, but he held it would be very much better if the Council opened their doors and put it in the rules and regulations that they were prepared to accept the courses given in the same subjects in institutions of undoubted standing, such as he recommended. No one could insist that the courses in chemistry given in many of the universities were inferior to those given in the veterinary colleges; in fact he considered it little short of an insult to the medical profession if they were refused. He had heard Professor M'Call say that some of the courses taught in veterinary colleges were accepted as qualifying for examinations for medical degrees in some of the universities, and why should not the veterinary profession adopt a corresponding reciprocity? It would add to the status and prestige of the profession if that were done. He had been told that he was cutting a stick to break his own head by moving the resolution. There was a difference of opinion on that point, but there was no room for difference of opinion on the fairness of the question. If the resolution was adopted he had not the least doubt it would tend to break down the spirit of exclusiveness in which to a great extent the profession was held.

Professor M'I. M'CALL seconded the motion.

Professor M'CALL stated that one of his students, who left the College in October, and who had passed his first year's examination, came to him and said that if he gave him a certificate that he had passed his first professional in chemistry, botany, and zoology, the Glasgow University would accept it, and enrol him as a second year student. He did so, and the student was enrolled. That showed the Glasgow University were inclined to accept their examinations for the first year's course.

Mr. CARTER protested against such proceedings, not thinking them right.

Professor M'FADYEAN wished to present the matter to the Council in a light which had been overlooked by Paofessor Dewar. He gathered from Professor Dewar that he admitted the bye-law allowed him to do all he wished in that direction at the present moment. He agreed that there was nothing in any of the bye-laws to prevent Professor Dewar doing what he wished the Council to pass the resolution to sanction. A foot-note was attached to the resolution showing that in the event of its being accepted it was to be inserted as a note at the foot of Examination A, bye-law 72. But he suggested that if it went anywhere at all it ought to go as a foot-note to bye-law 55. He had carefully read through the bye-laws and saw nothing in them to forbid him writing a certificate of eligibility to any student if he could truthfully show that he had been in attendance at his own particular college for the specified time. But it did not follow that because a particular course of action was not expressly forbidden in the bye-laws it would be a wise thing to pass an abstract resolution to say that such and such a thing was permissible, because some day it might be twisted to convey a meaning a little greater than what was intended at the time it was passed. He thought that all that had been said about the effect the passing of the resolution would have on the prestige of the Council might be put aside. It was very difficult to say what the prestige of the Council

was and what it depended upon. A great deal had been heard about reciprocity, and one single instance had been fished out in which tuition imparted in a veterinary college was accepted by a medical degree-granting body. He was certain that that concession was not made with any intention of conferring a favour on the veterinary profession. Professor Dewar had referred to the question of chemistry, and hinted that it would be insulting to the universities and other medical schools to suggest that the course of lectures on chemistry was not as good, or perhaps better, there than in a veterinary college. Of course Professor Dewar was speaking only about his own veterinary college, and he did not say that with the least intention of disparaging the teaching of chemistry there, which he well knew to be most excellent. Although Professor Dewar's motion included physiology, he had said nothing about it. What Professor Dewar wanted them to believe was that a course of human physiology was as good for a veterinary student as a course on veterinary physiology. To that he strongly demurred. He did not like the idea of the Council passing a resolution to the effect that they did not care where the student obtained his course of lectures. He thought it was much better the student should get his course of lectures on the qualifying subjects in connection with the veterinary schools. To pass a resolution in the sense of Professor Dewar's motion would be an invitation to the various veterinary colleges to say—You need not establish any chair for chemistry, biology, or physiology if you have a medical school near; your best plan is to send your students there; they will probably be better educated in the university than in the veterinary college. He did not admit that, at least as regards London, and he did not intend to admit that a course of lectures on human physiology was an adequate training for an examination in veterinary physiology. He was not sure that even in chemistry it was not advantageous to impart into the course of lectures certain modifications which were specially applicable to the training of those who were to be veterinary surgeons, and he earnestly hoped the Council would not pass the resolution.

(The President here vacated the chair, which was taken by one of the Vice-Presidents, Professor Williams.)

The CHAIRMAN stated that unfortunately he was now debarred from knocking another nail into the coffin.

Professor METTAM said he had no wish to add to the agony.

Professor DEWAR, in reply, said he could furnish more than one illustration of the certificates of students who had attended at the Veterinary College in Edinburgh being accepted as qualifying for medical examinations in the University of Edinburgh. In regard to the bye-law, he held that it would be to the advantage of the profession if it openly appeared that attendance at certain courses was accepted as qualifying for their examinations.

The motion was then put and lost, two voting for and ten against.

MOTION BY MR. DOLLAR.

Mr. J. A. W. DOLLAR moved the following alteration of bye-law:—"That should any member of the R.C.V.S. who may be accused of conduct disgraceful in a professional respect notify the Secretary more than ten days before trial of his desire to be tried publicly, facilities shall be given for the admission of members of the profession to the trial and for independent reporting of the evidence." He said the subject

had already been considered at very considerable length by the Council, which, at its last meeting, passed the resolution without a dissentient voice. The reason the resolution was again brought forward was that owing unfortunately to the inability of a sufficient number of members to be present at the special meeting a quorum was not obtained.

Mr. FRASER, on a point of order, asked whether the motion should not have been suspended three months? Did not Mr. Dollar begin again *de novo?*

The CHAIRMAN, after consulting the Solicitor, said the matter was in order.

Mr. DOLLAR, continuing, said that unfortunately a quorum was not obtained, one more member being required. Having expressed his deep thanks to the gentlemen who attended on that occasion, and expressing regret to the Council that he was obliged to ask them for their support again on the present occasion, he said, in conclusion, that he felt sure the matter was one whose clear justice was apparent on the face of it, and he had no doubt the Council would again approve the motion.

Mr. VILLAR seconded the motion, which was put and carried.

On the motion of Professor DEWAR, seconded by Mr. TRIGGER, a vote of thanks was accorded to the Chairman, and the Council adjourned.

Royal College of Veterinary Surgeons.

A SPECIAL MEETING of Council was summoned for Friday, the 25th April, at Three o'clock P.M., for the purpose of confirming the under-mentioned alteration of Bye-law, passed at a Special Meeting held on the 11th inst.:—

> "That should any member of the R.C.V.S., who may be accused of conduct disgraceful in a professional respect notify the secretary more than ten days before trial of his desire to be tried publicly, facilities shall be given for the admission of members of the profession to the trial, and for independent reporting of the evidence."

The following three Members of Council attended:—Colonel Duck, Professor M'Fadyean, and Mr. J. A. W. Dollar.

Seven Members of Council forming a quorum, and only three being present, no meeting was held.

[We think that such laxity on the part of Members of Council, many of whom reside or practise in the neighbourhood of London, amounts almost to want of principle, as it certainly does to a breach of the ordinary laws of courtesy.]

Royal Warrant.

ARMY VETERINARY DEPARTMENT.

EDWARD R.I. *April* 1902.

WHEREAS We deem it expedient to amend the regulations relating to the appointment, promotion, pay, and non-effective pay of officers of Our Army Veterinary Department;

Our Will and Pleasure is that the Warrant of Our late Royal Mother,

dated the 26th October 1900, be amended in accordance with the following provisions :—

APPOINTMENT AND PROMOTION.

1. Article 432 shall be cancelled, and the following substituted for Articles 433 to 436 :—

433. The appointment of Director-General of Our Army Veterinary Department shall be for 3 years, unless the term is specially extended by our Secretary of State for a further period not exceeding 2 years.

434. A veterinary-lieutenant shall be eligible for promotion to the rank of veterinary-captain on completing 7½ years' commissioned service, including at least 3 years abroad, provided that he has passed such examination as may be prescribed by Our Secretary of State.

435. A veterinary-captain shall be eligible for promotion to the rank of veterinary-major on completing 15 years' commissioned service.

436. Promotion to the rank of veterinary-lieutenant-colonel shall be made by selection from veterinary-majors who have served at least 3 years in India, and have passed such examination as may be prescribed by Our Secretary of State.

PAY.

2. The following shall be substituted for the rates of pay laid down in Article 439 :—

Director-General (inclusive of all allowances, except field and travelling allowances), . .	£850 a year.
	Daily.
Veterinary-lieutenant-colonel, . . .	£1 5 0
After 25 years' service, . . .	1 7 0
„ 30 „ . . .	1 10 0
Veterinary-major, ...	1 0 0
After 20 years' service, . . .	1 2 0
„ 25 „ . . .	1 4 0
Veterinary-captain, ...	0 15 6
After 5 years' service as such, . . .	0 17 6
Veterinary-lieutenant, . . .	£250 a year.

PAY DURING SICK LEAVE.

3. The following shall be inserted after Article 439A :—

439B. An officer of Our Army Veterinary Department may be allowed full pay during sick leave of absence on the same conditions as those laid down for regimental officers by Articles 298 and 299.

HALF-PAY.

4. The following shall be substituted for the rates of half-pay laid down in Article 480 :—

Veterinary-lieutenant-colonel, . . .	£0 17 6
After 25 years' service, . . .	0 19 0
„ 30 „ . . .	1 1 0

Veterinary-major or veterinary-captain, . .	£0	8	6
After 15 years' service, . . .	0	10	6
„ 20 „ . . .	0	13	0
„ 25 „ . . .	0	16	0
Veterinary-lieutenant, ...	0	4	0
After 5 years' service, ...	0	7	0

RETIREMENT AND RETIRED PAY.

5. The following shall be substituted for Articles 583 to 591 :—

(a.) *Voluntary Retirement.*

Conditions of Retirement.

583. An officer of Our Army Veterinary Department shall be entitled to retire after 20 years' service.

584. An officer of Our Army Veterinary Department may be permitted to retire after ten years' service, in cases in which such retirement may be deemed expedient by Our Secretary of State.

Scale of Retired Pay.

585. Veterinary-lieutenant-colonel—

	Yearly.
After 20 years' service, ...	£320
„ 25 „	400
„ 30 „	450
Veterinary-major or veterinary-captain—	
After 20 years' service, ...	250
„ 25 „	365
Veterinary-major, veterinary-captain, or veterinary-lieutenant—	Gratuity.
After 10 years' service, ...	£800

An officer of Our Army Veterinary Department who, on voluntary retirement, has served for less than 3 years in the rank from which he retires, shall only be entitled to the retired pay assigned to the next lower rank.

(b.) *Retirement on account of Age, or Limitation of Period of Service.*

Conditions of Retirement.

586. The Director-General shall, unless his service has been specially extended under Article 433, retire on completion of 3 years' service as such, and the retirement of the other officers of Our Army Veterinary Department shall be compulsory at the age of 55, except as laid down in Article 438.

587. . *Scale of Retired Pay.*

Director-General, Army Veterinary Department, .	£600	a year.
Veterinary-Lieutenant-Colonel—		
After 20 years' service, ...	320	„
„ 25 „	400	„
„ 30 „	450	„

Veterinary-Major or Veterinary-Captain—

After 10 years' service,	.	8s. 6d. a day.
„ 15 „	.	10s. 6d. „
„ 20 „	.	£250 a year.
„ 25 „	.	365 „

(c.) *Retirement on account of Medical Unfitness.*

Conditions of Retirement.

588. An officer of Our Army Veterinary Department placed on the half-pay list on account of medical unfitness shall, if not previously retired on account of age, be retired from Our Army at the expiration of 5 years from the date on which he was placed on the half-pay list, or, if reported by the regulated medical authority to be permanently unfit for duty, on the officer's application, at such earlier date as may be decided by Our Secretary of State.

Scale of Retired Pay.

589. Officers with at least 10 years' service—

Medical Unfitness caused by Military Service.—The rates laid down in Article 587.

Medical Unfitness not caused by Military Service.—The rates laid down in Article 585.

Officers with less than 10 years' service—

Medical Unfitness caused by Military Service.

Under 5 years' service,	.	4s. a day.
After 5 years' service,	.	7s. a day, or a gratuity at the rates mentioned below.

Medical Unfitness not caused by Military Service.

After 5 years' service,	.	A gratuity of £80 for each complete year of service.

It is Our further Will and Pleasure that passages be granted to the families of officers of Our Army Veterinary Department under the conditions laid down in paragraph 427 of the Regulations for the Allowances of Our Army, and paragraph 426 of those Regulations shall be amended accordingly.

Given at Our Court at St. James's this 20th day of March 1902, in the 2nd year of Our Reign.

By His Majesty's Command,

ST. JOHN BRODRICK.

FIG. A.—Showing the penis and pseudo-vulva.

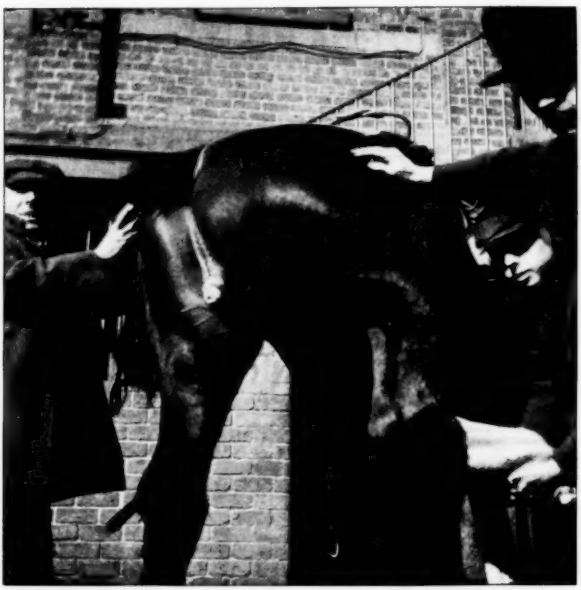

FIG. B.—Showing the two mammary glands in the inguinal region, also the penis.

Original Papers.

A CASE PRESENTING SOME FEATURES OF HERMAPHRODITISM.

BY HENRY TAYLOR, M.R.C.V.S., NEW VETERINARY COLLEGE, EDINBURGH.

We have lately had an opportunity, thanks to the kindness of Mr. Rutherford, F.R.C.V.S., of this city, of inspecting a case of more than ordinary interest which he met with in the course of his practice. The subject was a brown van cob, which one of his clients had bought, and the interesting feature about the animal was the abnormality in the sexual organs. Nature had endowed it with parts of the generative apparatus of both sexes—the animal possessing an organ something like a miniature penis (which did not occupy the regular position, however), mammary glands, and testicles. The so-called penis was placed at the lower part of the perineal region, and pointed backwards and slightly downwards. It projected in the natural state about three or four inches from the perineum, and could be withdrawn about two inches more from a structure which we might call the prepuce. The urethral opening was well marked, and was situated nearer to the superior surface than to the inferior. The glans penis was also quite distinct.—(See Fig. A.)

The mammary glands were two in number, and placed in about the normal position, if anything perhaps slightly forward of the place where they occur in the mare. They each possessed two well-marked lactiferous ducts.—(See Fig. B.)

The testicles could be felt high up in the inguinal region, but they hardly gave one the impression of being as tense as those of the normal condition. I am not quite positive that I could locate the external abdominal rings, but I fancied I could.

There was no vulva present, but there was a distinct invagination of the skin, resembling somewhat the female organ; this invagination, however, was quite incomplete, as it had neither a mucous lining nor an anterior orifice guarded by an os; it was lined by ordinary skin epithelium, and at its lower aspect had the supposed penis. It might be said that this so-called penis is merely an abnormally developed clitoris, but the clitoris in the normal female is not pierced by the urethra (the clitoris is, of course, the homologue in the female of the penis in the male, minus its urethra), whereas this organ was; then again this organ in the perineal region was situated some four or five inches inferior to the ordinary position of the clitoris.

The exact location of this interesting case in the domain of Teratology I leave to abler minds than mine, and I merely suggest that it offers *some* features of hermaphroditism. It does not seem to fit exactly any of the descriptions of hermaphrodites as given in Fleming's "Obstetrics," at least as far as one can make out in the living subject.

The owner says the animal works quite well.

For the photographs I am indebted to Mr. Stanley Elley, Class C.

M'GILL UNIVERSITY VETERINARY FACULTY, MONTREAL.

THE Annual Convocation for the conferring of degrees in the M'Gill Faculty of Comparative Medicine was held on the 28th March in the Old Library. Dr. Craik was in the chair, Sir William Macdonald also represented the Governors, and Principal Peterson was there as Vice-Chancellor. Dr. Duncan M'Eachran, Dean of the Faculty, read the report, and the prizes were presented as follows:—

Medal for best Examination during the three years' course, A. D. Harrington; prizes, Veterinary Medicine and Surgery, A. R. Douglas; Cattle Pathology, A. D. Harrington; Materia Medica, A. D. Harrington; Anatomy, T. C. Hays.

Extra prizes for the best Essay read before the Veterinary Medical Association—1st, A. D. Harrington; 2nd, A. R. Douglas; 3rd, W. R. Blair. For the best Essay read before the Physiological Society—1st, A. D. Harrington; 2nd, F. M. Gray.

The candidates for the degree of D.V.S. were then capped by Principal Peterson as Vice-Chancellor. They are W. Reid Blair, G. A. Kennedy, W. H. Spear, Alexander R. Douglas, Seymour Hadwen, J. W. Symes, A. D. Harrington, W. Manchester (*in absentia*).

Dr. A. R. Douglas read the class valedictory, in which he dwelt on their gratitude for the zealous and conspicuously able instruction of the professors, and urged the difficulties, responsibilities, and importance of the veterinary calling.

Dr. M'Eachran wished the students God-speed, saying no school in the Dominion had turned out so many leading veterinarians as the M'Gill Faculty, hampered in many ways as it is. He urged the great importance of science. When individual horses are valued at $100,000, and cattle at $15,000, and dogs at $10,000, the need of trained veterinary doctors is apparent. In the United States there are $2,000,000,000 invested in stock, and an annual loss of $20,000,000 from hog cholera alone. Moreover, the welfare of agriculture and the public food supply depends largely upon them. He went on to deal with the growing recognition of the science in the American Colleges, and pointed out the necessity of endowments for the carrying on of what is only one branch of the great science of medicine. The Provincial Legislature had at last recognised them by passing an Act to regulate the right to assume the title and to practise.

Dr. Peterson expressed his sympathy with the work of the Faculty, saying that at the University of Pennsylvania the efficiency of the Veterinary Faculty is continually rising, and he was extremely pleased at the decision of Harvard to take up their work in comparative medicine again with some of the endowments lately given them for the study of medicine. He concluded with a few words of commendation of the work done by the students and professors.

Dr. Craik said it had been one of his first duties as Dean of the Faculty of Medicine to assist in the incorporation of the Veterinary School in the University. He would remind them that his own Faculty had struggled along for years before reaching its present position of stability, and he believed their sun of prosperity would soon rise.

MILK INSPECTION.[1]

BY ANDREW HYDE, D.V.S., NORWICH, CONN.

MIXING skim milk with whole milk to obtain an average quality is practised by the skilful. This practice is said to be on the increase. The removal of a part of the cream is another method of adulteration. Milk thus adulterated is not only unsafe, but it contains less food value than it should, and the consumer is deprived of the nourishment which is supposed to be present.

If one is dishonest enough to water milk, he will probably not be concerned about the purity of the water added. Impure water contains many bacteria, among which may be some pathogenic species, such as *Bacillus coli communis*, that cause indigestion, diarrhœa, and dysentery in children and adults having weak digestive organs.

Various chemical compounds are sometimes added to milk to check or prevent bacterial changes. Among these may be mentioned formaldehyde, borax, salicylic acid, boracic acid, salicylate of sodium, carbonate and bicarbonate of sodium. These substances have very little taste or smell, and can only be detected by a chemical analysis. Their general use as preservatives is regarded as detrimental to the public health.

Milk may vary in quality from causes other than the use of adulterants. Some breeds of cows and individuals of the same breed give richer milk than others. Holsteins are famous for producing large quantity, while the Jerseys are noted for the richness of their milk. Food has an important bearing on the quantity of milk secreted. The period of lactation also influences the composition of milk, notably the casein and albumin.

Normal milk contains 33 per cent. of casein and albumin, but the first few days after calving the milk may contain 15 per cent. of these constituents. The total solids of milk increase as the period of lactation lengthens.

"HOW TO EXAMINE MILK."

The essential thing to do in examining milk is to distinguish between flagrant fraud and unavoidable variations. The first thing to be done is to obtain a sample, which may be either a single or composite one. Before the sample is taken the milk should be thoroughly mixed, so that the quantity taken may fairly represent the quality of the milk from which it was removed. A single sample may not be sufficient to clear away all doubt in regard to the quality of the milk from an individual cow or of a herd of cows, but a composite sample, extending over one or two weeks or more, will give reliable data on which to base an opinion, because the danger of occasional variation is avoided. It is true the circumstances of municipal inspection may be such that the use of a composite sample for seeking positive evidence is impracticable, and that other methods will give a safe result.

A composite sample is the total of daily samples extending over a desired time, *i.e.*, it may be the sum of the daily samples of a week or a month. A sample is collected daily (say one-third of an ounce) and placed in a bottle containing some fat solvent, such as ether or chloroform, but preferably carbon bisulphide (one objection to its use is its disagreeable

[1] Abstracts from a paper on Milk Inspection read by Dr. Hyde at the Meeting of the Connecticut Veterinary Medical Association in February 1902.

odour), because it is cheap and has the property of preserving the normal quality and miscibility of milk for a long time, probably indefinitely. For example, suppose the composite sample is to cover a period of ten days, place in a bottle one-half ounce (about 15 cc.) of carbon bisulphide, and every day add one-half ounce of the properly mixed milk. Then shake the bottle until on standing the fat of the milk is all on the bottom of the bottle. Each time, after putting in the daily sample, the bottle must be tightly corked. At the end of ten days the composite sample will consist of five ounces of milk (about 150 cc.) and ten per cent. as much of carbon bisulphide. It can then be sent to a milk analyst, if one is not prepared to make an accurate analysis himself.

Good whole milk has a whitish colour and sweetish taste. If it stands for several hours cream rises, and if complete separation has taken place, the cream should be about one-fifth of the total bulk. Skimmed or watered milk is thinner than whole milk, and has a bluish-white colour. If the milk is pure there should be no sediment on the bottom of the vessel after the cream has set. The yellowish colour of milk is usually due to fat, but it may be caused by bacteria and the presence of colouring matter.

"To detect colouring matter, add to some milk an equal quantity of ether, and shake the mixture; on standing, if colouring matter has been used, a yellow coloured solution will rise to the surface; if none is present, the solution will be clear."[1]

"Annato or butter colour is determined as follows:—100 cc. of milk, made strongly alkaline with sodium carbonate, are placed in a small cylinder, a strip of filter-paper, about one-half inch wide and five inches long, is introduced, and the whole allowed to stand in the dark for twelve hours. If annato is present the strip of paper, after washing, will be a pale salmon colour, which is changed to a decided pink by moistening with a solution of stannous chloride, and after drying at the temperature of the room to a bluish colour, on treatment with strong sulphuric acid."[2]

The test for acidity of milk. It is sometimes desirable to know if milk is fresh, or old and near the souring point, as in the latter condition it is unfit for infants, children, or delicate persons, and its value is less. For this test the most convenient method is that of using certain alkaline tablets (known as Harrington's Alkaline Tablets). Two of these are dissolved in water and added to an ounce of milk. They are of such strength that a solution of two of them will turn an ounce of fresh milk pink. If the milk remains white after this quantity has been added the supposition is that it is old and near the souring point, or that acid has been added.

The test for cream is a simple one, but not accurate, and about the only advantage of it is, that it gives a good opportunity for noticing if filth or sediment is present. The apparatus required is a creamometer, which is filled with milk to the zero mark, and then put in a cool place for twenty-four hours, when the per cent. of cream can be noted. Good milk should contain 20 per cent. of cream.

Another method may be used to facilitate the test. Fill the creamometer half full of hot water (120° F.), to which has been added a few drops of a solution of caustic soda, then fill with milk up to the zero mark. After stirring well set in cold water (40° F.) for thirty minutes, when the

[1] Harrington and Woll's Testing Milk, p. 92.
[2] N. Y. City Board of Health Report, 1896, p. 169.

cream will have risen, and the percentage present multiplied by two will be the cream content of the sample tested.

LACTOMETER TEST.

This test is used to determine if milk has been skimmed or watered, and is based on the specific gravity of milk, which is slightly heavier than water, ranging in good milk at 60° F. from 1029 to 1033. The instrument required is a glass bulb with a tabular neck containing a graduated scale. Some lactometers have a thermometer attached, which is very convenient, as not only the gravity is indicated, but also the temperature of the milk. Make the temperature of sample 60° F., then insert the lactometer, and note the reading of the scale at the surface of the milk. Good milk will indicate about 110 on the lactometer at 60° F. If the lactometer sinks below 100°, and the milk is thin and bluish-white, water has been added. On the other hand, if the lactometer reading is above 100°, and the milk is rich in appearance and sticks to the glass, it may be considered a pure milk. If cream is removed the gravity is increased, if water has been added it is decreased, hence a sample of high gravity indicates skimming, and a low one watering of the milk. Some cream can be removed and water added by the skilful and the gravity remain unchanged, and to detect that condition another test is used in connection with the lactometer, known as the Babcock test, which by certain formula discloses the proportion of fat and total solids present. A fair opinion of the composition of milk is indicated by the percentage of fat present, as the total solids increase and diminish as the fat is greater or less. If water has been added to milk the percentage of fat is reduced in proportion to the other constituents, but if milk is skimmed there is a greater proportion of solids, not fat and water. Full directions for using the lactometer are found in Harrington and Woll's "Testing Milk and its Products," pages 80 to 85.

"Positive evidence of adulteration is furnished, a fair sample of herd milk being taken:

"(1.) When the Sp. Gr. at 60 degrees F. is less than 1029, and the fat is 4 per cent. or over, the milk is watered.

"(2.) When the Sp. Gr. at 60 degrees F. is more than 1035, and the fat less than 4 per cent., the milk is skimmed.

"(3.) When the fat is 3 per cent. or less, and the total solids more than 12·00 per cent., the milk is skimmed.

"(4.) When the fat is 3 per cent. or less, and the Sp. Gr. at 60 degrees F. is less than 10.319, the milk is skimmed and watered."[1]

"Test for Formalin.—A few drops of milk are floated on a small quantity of concentrated sulphuric acid, containing a race of chloride of iron. If formalin is present a violet blue ring will appear at the line of demarcation."

"Test for Salicylic Acid or Salicylate of Sodium.—Coagulate some milk with a few drops of acetic acid, filter, and shake the filtrate with ethyl ether in a separating funnel. The ether is carefully drawn off and evaporated in a water bath. The residue, if any, is treated with a little water, filtered, and a drop of neutral ferric chloride added; a violet colour indicates salicylic acid or salicylate of sodium.

[1] Annual Report of the Chief Inspector of Milk, and of the Chemist of the Board of Health of Philadelphia, 1897, p. 34.

"Sodium carbonate and bicarbonate are indicated by a strong alkaline character of the ash and prominent effervescence by adding dilute acids. Also to 10 cc. of milk and 10 cc. of alcohol, and a little of a 1 per cent. rosolic acid solution. If soda has been added to the milk, a rose colour is produced; and if absent, a brownish colour is present.

"Test for Borax or Boracic Acid.—To 100 cc. of milk add lime water to make it alkaline, dry it, and then burn the mixture slowly to ash; acidify the residue with strong hydrochloric acid, and add 20 cc. of methyl alcohol. Connect the flask with the condenser, and distil 10 cc. of the methyl alcohol into a platinum dish. Place the dish in a dark place and ignite the alcohol; if borax or boracic acid is present, it will burn with a grass-green flame.

"PREVENTIVE INSPECTION."

Much praise is given to the dairyman or dealer who pasteurises his milk, and puts it on the market in a practically germless condition, but greater credit belongs to him who conducts all his dairy operations in such a sanitary manner as to render pasteurisation unnecessary. Nothing is added to the nutritive value of good milk by heating it to a temperature sufficient to pasteurise it, and some assert that such a process destroys some of its digestive properties, as well as imparting to it a burnt taste which is very disagreeable to some. There is also the question, if the practice of pasteurisation for the removal of filth was generally adopted, would it not tend to carelessness and more filth in the management of dairies?

Municipal inspection should begin by an examination of the cows, This should be done by a competent person, selected because of his ability. the result of a competitive examination if necessary. The precaution of testing the cows with tuberculin should be done whenever it is expedient, notwithstanding the recent opinion that the transmission of tuberculosis from bovines to the human family is very slight. A careful examination should be made of the health and general appearance of the cows. Those having recently calved, or seriously lame from foot-rot, or the victims of sores discharging pus, should have their milk excluded from the commercial article. The same may be said of the milk of very old cows, or those in a debilitated condition, or those having a bodily temperature sufficient to indicate disease. The list of ailments is a long one to which cows are more or less subject that render milk unfit for food. Many of these might escape the attention of the well-meaning dairyman, simply because he had not been trained to observe them. The trained entomologist can discover at a glance the small insect on the trunk of a tree, while one who lacked his power of observation could not find it until it was pointed out to him. So, too, with the educated veterinarian; he can, for example, observe the unusual convexity of the lens of the horse's eye, that makes the animal unsafe, which would in all probability be overlooked by even the skilful horseman. It is not a case of short-sightedness of him who could not see the insect, or the convexity of the lens, but a highly developed power of observation of the entomologist and veterinarian.

The food and feeding of dairy cows should be under systematic regulation. That certain kinds of food are injurious to cows and their milk is well known. Bitter weeds, turnips, and wild onions will produce a bitter taste and disagreeable odour in the milk of cows consuming them.

Pungent smelling ensilage which is in the active stages of decomposition should be excluded from the cow's ration. The by-products of distilleries, readily available in the vicinity of large cities, such as brewery grains and swill, produce a large flow of milk of inferior quality. Moreover, the cows fed with that food are not as healthy as those fed on good hay and grain. Musty coarse fodder of any kind and decaying vegetables should be excluded.

To avoid the dust incident to feeding it is necessary that the cows should be fed after milking; the cows should be cleaned after the dust settles. The manure and other stable filth should be removed frequently. It is impossible to keep dirt out of the milk if the atmosphere of the stable is laden with it. The same is true if the body and hips of the cow are covered with dirt and particles of manure. The stable at best is a place where dirt gathers rapidly, therefore it is important to exercise the precaution of having it frequently and thoroughly cleaned. Of the list of impurities found in milk the majority have their source in stable dirt. When an eighth of an ounce of dirt is found in a dozen gallons of milk it is apparent that there is gross carelessness in the management of the stable and its occupants.

The necessity of pure water for the cows and cleansing the dairy utensils cannot be made too emphatic. The source of the supply should be inspected to learn if the well or spring is sufficiently deep and clean and so located that it will not be polluted by surface drainage or otherwise. If the location or depth of the water source seems unsuitable, and there is fear that the water is being contaminated with bacteria from surface drainage, the stable, barnyard, or dwelling, a sample should be sent to a bacteriologist for examination. The water from a well infrequently used should be examined by a bacteriologist or the water removed a number of times before being used regularly.

The drinking places for the cows should be slightly elevated, and the surface about the trough paved with cobble stones or other suitable material to prevent mud and dirt from getting into the water. Spittle and particles of food from the cow's mouth are a constant cause of filth in the water, making it necessary to frequently clean the watering trough or other drinking place, unless it be a running stream of considerable size.

The arrangement of the stables should be such as to make them light, airy, roomy, and easily drained. Cows kept in apartments partly under ground (basements) will not do as well as in well constructed stables above ground. There is a dampness to under-ground stables which is almost impossible to overcome. In addition to this there is insufficient light and ventilation and the inevitable condition of imperfect drainage. These insanitary conditions prey upon the vital energy of a cow and weaken her physically. All of them can be obviated in stables above ground. Five hundred cubic feet of air space per cow is deemed sufficient if the stable is well supplied with windows and ventilators to furnish light and air. It is, of course, important to frequently remove the manure some distance from the stable; it ought never to be piled in the stable as is often done. The stable can be easily drained if the flooring is hard wood laid tight, giving a little pitch for the liquids to run off into a tank provided for the purpose.

Carelessness on the part of the milkers themselves is a common cause of dirty milk. They should never begin milking immediately on entering from the hay-field or hay-loft or after doing any dirty work. Dust and filth

will settle on their clothes as well as on the cow's back, and it is just as essential that it is removed from one place as from the other.

Another step in the control of milk is the inspection of the dairy and other places where milk is kept, handled, and sold. The farm dairy, in most instances, consists of a milk room, provided with the necessary utensils for containing, straining, and cooling the milk. This place should not be so situated that it will get foul odours from the outside, nor so conducted that they will originate within it. The room should be as pure as sunlight, fresh air, and strict cleanliness can make it. It cannot be kept pure if it is immediately adjacent to the barn-yard, stable, or silo. Special care must be exercised to dry the place out once a day by opening the windows, &c. The wood-work, as far as possible, should be painted in some light colour, that will reveal dirt and decaying milk upon it. There should be an abundance of pure water in the room, if the milk containers and other utensils are to be easily and thoroughly cleaned.

The milk-pails, cans, &c., should be made of substantial metal, well tinned, and as seamless as possible. Crevices serve as the abode of germs and filth, which cannot be fully removed without hot water, some cleansing preparation, and special care. The dairy room should be well piped for drainage.

While it is almost the universal practice on the farm to provide a place especially for keeping milk, it is not always the case in the butcher's shop, grocery store, and restaurant, where milk is kept for sale. Even in the consumer's home there is often a lack of attention in caring for milk. The consequence is, it sometimes sours quickly and a careful dairyman is blamed. It is just as necessary that all of these parties should exercise the same care of their milk as the dairyman gives it while it is in his possession. Frequently there is very little thought given by dealers and consumers to the temperature of the places where milk is kept. It is generally intended to keep it in a cool, suitable place, but whether the temperature is sufficiently cold to keep good milk from souring is seldom considered. Milk delivered in good condition can be kept sweet one or two days at a temperature of 50° F., but it will not keep from souring that length of time if exposed to the higher temperature of some refrigerators in very warm weather. An ice-box may seem cold on account of the intense heat outside, but the thermometer placed in it would register considerably above 50° F.

Sometimes milk which is clean and pure when it leaves the dairyman's hands acquires a peculiar odour afterwards. The refrigerator, whether in the grocery store, market, residence, or restaurant, and the container in which milk is kept, are a common cause of this trouble. It frequently happens that the butcher who sells milk keeps it in an open vessel in a refrigerator with meats, some of which may be tainted.

The family supply is placed in the refrigerator with cooked meats and vegetables. Others keep it in unsuitable receptacles, as wooden vessels and old dishes. The property of milk to readily acquire odours makes it necessary that it should at all times and places be kept under conditions to prevent them being taken up by the milk. Therefore, as stated above, it is important that the dealer and consumer exercise the same care as the dairyman gives it.

NEW CANINE MEDICINES.

BY J. DOWLING ADMAN, MEMBER OF THE PHARMACEUTICAL SOCIETY.

BISMUTH SALICYLAS.

THIS compound, obtained by treating nitrate of bismuth with a solution of sodium salicylate, is a white or nearly white powder, insoluble in water, alcohol, or glycerine, has been employed in human practice for some time in the various forms of diarrhœa and vomiting dependent upon gastric irritation, diarrhœa of typhoid, and of gastric intestinal catarrh. In canine practice it was first introduced by Mr. F. J. Taylor, M.R.C.V.S., Mosely, Birmingham, who employed it with considerable success in the epidemic of diarrhœa and vomiting in dogs supervening on attacks of influenza. From his clinical notes he found it invaluable in checking the relaxation and gastric vomiting, acting as an intestinal sedative and disinfectant to the alimentary tract. Mr. Taylor generally administers the drug in doses of 7 grains in small gelatine capsules, which are very easily given. His clinical reports of the drug have been confirmed by Mr. Frank Leigh, F.R.C.V.S., Bristol, and various other eminent canine practitioners. Some have administered it in the form of a mixture, suspended with mucilage or tragacanth.

ANTHELMINTICS.

Capsules of oil of male fern, with turpentine. These were first suggested to me some few years since by Mr. Wm. Shipley, Junior, F.R.C.V.S., of Yarmouth, and are known amongst canine practitioners as "Shipley's Vermifuge Capsules," and judging from the reports of numerous veterinarians I don't know of any vermifuge that has given such entire satisfaction for the expulsion of intestinal worms (*Tæniæ* or *Lumbrici*). Each capsule contains 5 minims of the oil of male fern and 5 minims of turpentine. Mr. John Cartwright, M.R.C.V.S., of Wolverhampton, has used these capsules in his extensive canine practice ever since their introduction, and has found them invaluable for the expelling of the different species of entozoa which dogs are so prone to. Like all anthelmintics, there are certain general rules which govern the administration of these capsules and which should not be lost sight of. Let the alimentary canal be as empty as possible, so that the combination of the drugs may act with the greatest force upon the entozoa. For this reason they are best administered in the morning, and repeated for three or four mornings, and followed with a dose of castor oil.

TÆNIGEN.

This is another vermifuge which is popular with canine practitioners. It is prepared from areca nuts, and is very active in killing and expelling the round-worm (*Lumbrici*) in dogs, and when given in moderation is entirely safe. It seems to narcotise the worm, and requires the use of a brisk cathartic. It is strongly commended by Mr. C. S. Smith, M.R.C.V.S., Barnsley, Mr. H. Hall, M.R.C.V.S., Southampton, and several other canine practitioners. The dose of tænigen is from 15 to 60 minims, according to the size and body weight of the dog. It is also best given in capsules.

Ridgemont, Ealing.

PORTABLE ENEMA FUNNEL.

THE funnel represented in the drawing has been designed by me to act as an emergency instrument only, not in any way to supersede the usual tin one. I have, however, on several occasions been called to a case and found such an instrument exceedingly clumsy to carry, even in a trap, and yet it was necessary to take it, as, in the country at all events, such a thing is seldom to be found on the premises.

The matter was forcibly brought home to me some few years ago by seeing a man ride up the village street on a bicycle with a tin enema funnel tied over his shoulder, and being informed by a bystander that he was "the doctor on his rounds."

The idea of this instrument is taken from an improvised one I once made out of a wooden spigot top and a tin funnel. The pipe is an ordinary wooden one, the bag is made out of Willesden green canvas, which is stiff enough to retain its shape, and is kept open by a hoop of whale bone at the top, the bottom being furnished with a screen to fit into the pipe.

The whole can be rolled up into a small case that will go into the pocket, or that can be fastened on to a bicycle handle.

The instrument was made for me by Messrs. Main, Son, & Thomson, Aldersgate Street, London, and it was at their suggestion that Willesden canvas was used.

JOSHUA A. NUNN,
Vety. Lieut.-Colonel,
Deputy Director General, A.V.D.

REPORT ON A PARASITIC DISEASE IN HORSES, MULES, AND CARIBAO IN THE PHILIPPINE ISLANDS.[1]

BY CAPTAIN J. J. CURRY, M.D., ASSISTANT SURGEON U.S. VOLS.; MEMBER OF THE BOARD TO INVESTIGATE DISEASES IN THE PHILIPPINE ISLANDS.

INVESTIGATION of a parasitic disease occurring in the caribao has shown that the parasite found in these animals is identical with that reported by Smith as occurring in horses and mules, and which appears to be the "surra" parasite (Trypanosoma Evansi). A biting fly (not as yet identified) appears to be the disseminating agent of this disease in horses, mules, and in the caribao.

When I arrived at Manila, October 26, 1901, I found that Assistant-Surgeon Allan Smith, U.S. Army, with Surgeon J. J. Kinyoun, of the Marine-Hospital service, had discovered a parasite in the blood of horses and mules affected with a fatal epidemic disease. They found that while the temperature of the infected animal was high the parasite occurred in the blood in enormous numbers. Soon after this Captain Smith identified the

[1] From a Report made to the Surgeon-General of the Army, December 17, 1901.

disease as "surra," which is well known in India and Burmah, and is closely related to the nagana or tsetse fly disease prevalent in Africa.

Since my arrival I have been assisting Dr. Smith. At first we tried various treatments, in the hope of saving some of the sick animals, but the results were discouraging. No treatment seemed to be of value. Methylene-blue and quinine subcutaneously and intravenously were of no avail. Recently Dr. Smith went to Southern Luzon with Major Potts, of the Inspector-General's Department, to investigate the origin and spread of this widespread epidemic of surra in Government horses and mules, and in the meanwhile I have been working in Manila on the mode of transmission of this disease, and have collected considerable evidence. The natives ascribe the origin of this disease to infected pastures and grass.

It was only recently that I obtained healthy animals for experimentation, and the experimental stable is not yet finished, but I hope to start this work very soon. Although I have as yet little experimental evidence to offer, still there is strong circumstantial evidence in favour of the transmission of the surra parasite by means of a biting fly. I have found on infected animals a biting fly closely resembling the tsetse fly, and filled with blood. On dissection these flies have been found to contain large numbers of active Trypanosomata, which disappear in two days from the fly's body.

An experimental station has been established in the walled city, and I have obtained two caribao in addition to the horses and ponies. I had no idea that these caribao had the disease, as they were reported well, save that one had an injury to one of its legs, received while being unloaded from a transport. These animals were stabled at the pony corral, and had been there for some time, the injured one not having been outside the corral for six months. I asked for the injured animal with the view to finding if it were possible to give the disease "surra" to it. We had a white mule ill with surra in quarantine at the pony corral, and it was my intention to transfer some blood from the mule to the caribao by subcutaneous injection. Before doing this I examined the caribao's blood in order to become familiar with the normal caribao blood. On examination of the blood of the injured caribao I was surprised to find it swarming with surra parasites. I took the animal's temperature, and found it 105°. I then examined the blood of the other caribao, and found the same condition—parasites very numerous in the blood, and temperature 105.8° F. On further investigation I learned that a week before both these cariboa had been turned loose in a small pasture occupied by the infected white mule before mentioned. On both caribao and on the mule I caught flies identical with those in which I found the surra parasite at the Malacan corral. The flies containing blood had large numbers of the Trypanosoma, while those not containing blood were negative for parasites of surra.

This discovery throws some light on the origin and spread of surra. Dr. Slee, veterinarian to the Civil Board of Health, upon his return from a tour of Southern Luzon, where he was recently investigating the diseases of cattle, stated that prior to the epidemic of surra among native ponies in the Camarines and Albay provinces, that there had been severe loss among caribao and other cattle, attributed to rinderpest. He also said that the epidemic disease among caribao and other cattle was devastating the same districts in which the "horse disease" was very prevalent. It was never suspected before that the cattle disease and the horse disease had any relation.

It is very probable that the cattle epidemic is *surra*, not rinderpest, and that the disease among horses and mules which has destroyed such a large number of animals had its origin from infected caribao or other cattle.

Rinderpest has existed for several years in the southern provinces of Luzon and in some of the other Philippine Islands. I have telegraphed to Dr. Smith, at Nueva Caceres, and requested him to examine all sick caribao, and to look for the fly which I found containing surra parasites. I trust soon to be able to make further reports on this disease.

THE CAUSE OF CANCER.

THE etiology of carcinoma has received special attention at the hands of von Leyden and his assistants. One of the latter (Schaudinn) claimed to have discovered an amœba in the growths examined, which, he believed, was the casual agent. In order to test the truth of this discovery von Leyden entrusted the further investigation to his amanuensis, Feinberg, who now reports the results of his observations (*Deut. med. Woch.*, March 13, 1902). He succeeded in demonstrating that the bodies endowed with amœboid movement discovered by Schaudinn were really body cells. He thereupon ceased to study the subject by cultural methods, and regarding experiments which attempted to infect animals with carcinoma as misleading, adopted the safer and more scientific method of histological investigation. If cancer is due to a parasite, the parasite must be found in the growth, and therefore it is necessary first of all to recognise it before one proceeds to cultural and inoculation experiments. He described briefly the histological appearances of the cells of carcinomatous tumours and the degeneration forms of the same. Early growths are free from degeneration forms, and are therefore suitable for searching for possible parasites. Sections of very early growths revealed (1) polymorphous cells and cell collections, which possess larger and smaller nuclei of varying shapes; (2) cells which correspond with the shape of the nuclei very distinctly; and (3) vacuoles, one might almost say bladders, which are absolutely independent from the cells, and which are situated in the midst of the cell collections. They reveal absolutely no contents even when intensely stained. He was in a position to demonstrate that these vacuoles are organisms, which are so differentiated from the cells of nuclei that one must regard them as organisms independent from the tissues of the body. They present certain characteristics, which suffice to differentiate them from body cells. (1) A double contoured stout membrane invests them. This stains intensely grey, with orange gentian (plasma-stain). (2) A nuclear body surrounded by a lighter unstainable zone can be seen when stained by safranin or gentian violet. (3) A zone surrounding the last mentioned is stained by orange gentian. This, he believes, is radially striated. He argues in detail that these characteristics cannot be found in body cells, although ganglion cells may produce an effect somewhat similar to it, when treated with sublimate. A study of the parasites of cabbage strengthens this assertion. To obtain a clear specimen it is necessary to receive a carcinomatous tumour, directly from the hand of the surgeon, in the operating theatre, and to fix it at once. Early mammary growths are best suited, since they need not be altered by the effect of antiseptic fluids, and need not be cut into by a knife wet with antiseptics. The fixing is carried out

by Flemming's solution of osmic acid, chromic acid, acetic acid and water. The growth is divided into small portions, and after fixing, are washed for twenty-four hours in running water, then hardened in alcohol, commencing in 20 per cent. and gradually increasing to pure alcohol, then in alcohol and chloroform, and lastly in pure chloroform. The tissue is then embedded in paraffin, with great care, and after section (the sections must not be too thin: he advises 5 to 8 μ) adhered to cover-glasses by means of Meyer's glycerine—albumen method. They are then stained as follows:—(1) In equal parts of a saturated solution of safranin and aniline water decolorised in alcohol, and washed; (2) in ½ to 1 per cent. solution of gentian violet, washed and dehydrated in alcohol; and (3) in orange gentian solution (Nawaschin); washed in xylol and mounted in Canada balsam. The preparations show (a) the plasma of the cells of the cancer tissue stained grey; (b) the nuclei of the tumour cells stained red, and reddish-violet and violet; and (c) all mitobic nuclear particles stained intensely red. Further (α) the double contoured membrane of the orgodism stained intensely grey; (β) the nuclear little body stained bright red to reddish violet, while the surrounding zone is unstained; and (γ) the plasma stained a much paler grey than the plasma of the tumour cells. After examining a variety of these organisms, Feinberg has come to the conclusion that they are sporozoon. He believes that they are casual organisms, although he reserves himself a final conclusion until he has completed his observations and experiments. In theorising he starts with the fact that as sporozoon they exist in a somewhat altered form to their original form, being encapsuled. They are found in greater numbers in early cases than in later cases. He suggests that their presence calls forth a reactionary attempt on the part of the body to remove the invaders, which takes the form of an enlargement of the cells and multiplication of their nuclei. The cells are, however, incapable of destroying or absorbing the organisms, and merely become massed up in the form of a tumour. To protect themselves the organisms envelop themselves in their capsules. Feinberg considers that in doubtful cases the recognition of these organisms is sufficient to clinch the diagnosis of carcinoma.

(*British Medical Journal*, April 19th, 1902.)

BRUISE OF THE FOOT.[1]

BY WM. HUNTING, F.R.C.V.S.

A BRUISE is an injury affecting subcutaneous parts, unaccompanied by an opening in the skin. Bruises vary in intensity from those so slight as only to cause a little discoloration of skin, to those in which tissues are destroyed and blood-vessels ruptured, with extensive subcutaneous hæmorrhage. The skin is always injured, but when it covers soft tissues the damage may be slight compared with that inflicted on deeper parts. Muscles may be greatly injured by a blow which leaves little mark upon the overlying skin.

The foot of the horse, being covered by horn in place of skin, is pro-

[1] Read at the Meeting of the Western Counties Veterinary Medical Society on 20th March 1902.

tected from many slight concussions which would otherwise cause bruise, but when violence is sufficiently great to injure the sub-corneal tissues the resulting lesions are often more grave than those due to bruise of parts less well protected. The unyielding layers of horn do not allow swelling, and so pain is greater than it would be if yielding skin covered the injury. The innermost structures of the foot are hard, and between them and the outer layer of horn the soft tissues, when inflamed, suffer great disadvantages. Swelling is prevented, effusion cannot escape, and suppuration runs a more than usually destructive course, necrosis being often rapid and extensive.

In the foot of the horse there are collected together tissues and structures of great variety. Bone, ligament, and tendon in the centre, horn outside, and a vascular secreting layer between them. At the heels and under the frog is a mass of yellow and white fibrous tissue. Round the upper border we have the coronary band, and postero-laterally two cartilages partly within and partly without the hoof. All these structures are liable to injury by concussion or by excessive pressure. They may be bruised without affording to the eye the usual evidence of swelling and discoloration which accompanies similar lesions under skin. Lameness may be the only sympton.

Every one knows the increased gravity of a compound over a simple fracture. So long as the injury is under an unbroken skin, bruises, or even fractures with laceration, are comparatively free from grave results. When the skin covering bruised or lacerated tissues is penetrated the conditions are altered, and the results may be and often are serious. Suppuration with its attendant danger is difficult to prevent, and almost as difficult to control.

Following bruise on the outside of a horse's thigh we often see a swelling containing serous fluid, and perhaps a little hæmorrhage. These so-called serous abscesses are good illustrations of the subcutaneous bruise. They are not very painful, because the exciting cause has ceased, inflammatory effusion is poured out, swelling results, and they may remain a considerable time before absorption affects their dispersal. When opened and their contents evacuated suppuration almost inevitably occurs. In this position suppuration does little harm, and division of the skin which permitted it is justifiable, because it is the quickest way of dispersing the swelling. We have no fear of the suppuration affecting neighbouring structures or of attaining a position from which it cannot escape or be readily removed.

The position of the foot and its anatomical structure offer a very different set of conditions for the origin and progress of a bruise. A wound through the hoof is not to be lightly made, even with the beneficent intention of permitting the escape of effused fluids. Immediately the horn is penetrated admission is offered to septic organisms, and the result is not always subject to our guidance. There are conditions in which it may be advisable—even necessary—to cut through the hoof, but those conditions should be known to exist. It is not good surgery to incur the risk of admitting septic organisms within the hoof simply on the off chance that some products of inflammation are present and should be removed. I agree that it is important not to leave suppuration or necrotic tissue within the hoof one moment longer than can be avoided. The important preliminary point is to diagnose its existence. In practice the rule with many

men is to search for suppuration as though it mattered little whether the hoof was cut through or not. I am inclined to believe that nearly as much harm was done twenty years ago to bruises of the foot by the surgical interference adopted as by the original injury. It was then no uncommon thing to see a sole cut through in three or four places by a farrier searching for "matter." If a man failed to diagnose a foot injury that ultimately showed itself by breaking out at the coronet he was blamed as inexcusable. If, on the other hand, he dug holes through the hoof, in a case unattended by any effusion within the hoof, he was merely considered cautious, and the damage to the foot was not credited to his unsurgical work.

In many cases cutting through the hoof has been the sole cause of suppurative changes which have endangered the life or permanent usefulness of a horse. Even when no suppuration follows a wilful wound of the foot, it should be remembered that the hoof is locally destroyed to an extent which cannot be repaired in less than two or three months.

The chief causes of bruise are undoubtedly pressures by nails or shoe. A very direct cause of bruise is traceable to a clip being hammered up too tightly, especially when the horn underneath has been excessively cut away. Perhaps when two side clips are used and both are hammered up we have the most rapidly evident lameness produced by clips. In a few cases the cause is some weight or pressure accidentally applied by external objects.

A very simple accidental bruise is caused by a stone picked up and retained by the shoe. Lameness immediately results if the sole be thin, and as suddenly departs on removal of the cause. If the stone be retained lameness continues, and then we find discoloration of the horn over the injured part. No slight bruise stains the horn, so that discoloration extends to the surface layers. The stain of a slight bruise affects the deepest layers of horn, and is only visible by removal of the more superficial horn. The bruise resulting from a picked-up stone, if severe enough to cause staining, is probably first detected when the horse is next shod and some horn removed from the sole by the farrier. A simple bruise of the sole which has caused no lameness save that noticeable before the stone was removed, is quite a temporary injury. It may, however, be aggravated by repeated pressure on the part.

Horses that stand on sawdust or moss litter are sometimes found with extensive discoloration of the horny sole in front of the frog. Their bedding materials collect in the shoe, as snow does, and form a mass which keeps a continued and uneven pressure upon the sole. A sound foot is not injuriously affected, but a very thin sole is, and so also is a sole which has been bruised by a picked-up stone. Even a slight bruise becomes serious if pressure is permitted to remain active over the injured part. Lameness increases, serous fluid is effused between the horn and the sensitive part, or even hæmorrhage may take place.

Uneven pressure by an improperly fitted shoe usually causes bruise of the sole, either at the toe or heel. Flat feet are most liable to be injured at the toe by the inner circumference of a shoe. This is not now-a-days a common injury, and all I need say about it is that prevention should consist only in alteration of the shoe—not in paring the sole.

The bruise occurring at the heels, usually spoken of as a "corn," requires fuller treatment. The way in which bruises at the heel occur is perhaps more complex than at first appears. Of course the shoe plays only

a passive part. The pressure which causes bruise is due to the weight of the animal pressing down the foot on to the shoe. This pressure is in action when the horse is standing, but is applied with greater force during progression at the time the shoe reaches the ground.

The pressure of weight from above has an effect on the back parts of the foot which does not occur in the front portions. The posterior fourth of the foot is not so rigid that it cannot yield perceptibly to weight, and if the anterior three-fourths have a level bearing, which is denied to the posterior one-fourth, there is a very apparent downward yielding of the frog, heels, and wall behind the quarters. This is well seen in feet when a space is left between the heel of the foot and the extremity of the shoe. The length and fit of the extremities of shoes are to be remembered in connection with this downward movement of the foot, because it is evident that any portion of the shoe which presents a prominence must invite uneven pressure from the intermittent downward movement of the foot.

It has been noticed that corns which occur in feet affected by sidebones are always worse than in feet with normal elastic cartilages, and the explanation seems to be that the downward movement I have referred to increases the chances of bruise, because the sensitive tissues are pinched between the bone above and the hoof below. To prevent this it is essential that a shoe should always be so long that downward movement of the heels is impossible—not only must the shoe be as long as the wall, but it must have an even bearing surface throughout its whole extent. A corn is the result of a badly fitted shoe—not necessarily of a badly made shoe. If a level shoe be fitted to a foot having a level bearing surface, there is one condition which may result in a bruised heel. If the horn between the bar and the wall is exfoliating, although only level with the wall at the time of shoeing, it will soon be unevenly pressed upon. It gets loose, and then is as much a foreign body as a stone. It swells with moisture, and then receives an undue pressure which is transmitted to the sensitive parts below. Good fitting requires that the bearing surface of the foot should be as carefully attended to as the bearing surface of the shoe. The horn in the angle of the heel between wall and bar should never afford a direct bearing for the shoe.

Wide flat feet are most liable to be bruised at the heels. It is rare to find bruised heels in narrow mule-shaped feet. Short shoes are more liable to cause bruise than long ones, and thus we find corns common in fore feet of hunters, but rare in hind feet. Of course the bruise from a short shoe is due to the uneven bearing of its extremity, and to the fact that the back parts of the foot yield downwards when there is no level surface reaching back the whole extent of the wall. A shoe longer than the foot may cause bruise if the bearing surface is so formed that its most prominent part is just over the seat of the corn. The shoe with an "eased" or "spring" heel affords all that is necessary to cause corn in a weak foot. Its bearing ceases exactly where the inclined surface affording the "ease" commences, and so uneven pressure is constantly applied to this one spot.

The retention of shoes for so long a time that they are carried forward on the foot, and the inner branch rests within the wall at the heels, is another common cause of "corn."

By far the majority of corns are found at the inner heel, but it is easy, by bad fitting, to cause them on the outer heel. Some years ago a London Tramway Company had 80 per cent. of their horses suffering from corns,

and quite half of the lame animals had corns on both heels of both feet. The principles of shoeing which led to this were delightfully simple—"lower the heels till the blood oozes, so that the frog may take a bearing on the ground; fit your shoes short and close, so that they may not be trodden off." Insufficient horn to protect the heels and uneven pressure of shoes bruised the heels, as might have been expected.

Why is the inner heel most frequently bruised by ordinary shoeing? A theory is widely accepted that this is due to the inner heel being more directly under the line of gravity of the horse—that the inner portion of the foot and limb receive greater pressure than the outer. This theory always seems to me a reflection on the powers of nature that no one would deliberately apply to a carpenter, Any decent joiner could make a chair whose legs took an equal and all round bearing, and would resent being told that the outer portion of the legs took less bearing than the inner. I certainly know no reason to suspect that the foot always receives more weight on the inner than the outer side. The wear of most shoes suggests the opposite. I think it safe to believe that under ordinary normal conditions the pressures, weights, and bearings are equally distributed all over.

There is a very simple reason for "corns" being nearly always in the inner heel. Every shoe is fitted "closer" on the inside of a foot than the outside, and very many a little shorter. This alone is enough to account for the one heel suffering more often than the other.

The symptoms of bruised heel (corn) are lameness when trotted, and usually resting the foot on the toe when standing. In the absence of any marked lesion in the limb to account for these signs we look at the foot, and if the shoe be faulty in fit we suspect that it may be the cause. On removal of the shoe the foot is submitted to pressure with pincers, and any sign of pain elicited suggests the spot pressed is probably the seat of injury. A bruised heel covered by a strong layer of horn may give rise to no flinching, and therefore it is necessary to remove a little of the horn and repeat the pressure. It is rather curious that lameness resulting from a bruised heel may arise suddenly. One would expect that a bruise from the end of a shoe would be the result of repeated and perhaps prolonged injury, and that it would cause lameness, slight at first and slowly and gradually increasing. I believe the injury does so occur in the majority of cases, but there are instances in which a considerable amount of bruise may exist without lameness. The one extra step on the heel of the offending shoe causes such an aggravation of the lesion as to produce sudden and acute lameness. This point is important in legal cases. When the heel of one foot is bruised lameness is marked, but when both feet are equally and similarly affected the lameness is not of the sort we may call "nodding"—it is "shuffling," as in other cases when both fore feet are implicated.

Is there anything peculiar or suggestive about the action in "corn" lameness? I think not. It is just as are other foot lamenesses—very distinctive AFTER you have found the lesion, but mistakeable at times for the action seen in shoulder or splint lamenesses.

A bruise of any part of the sole causing lameness is discoverable only by removal of horn over it. If we suspect a bruised heel we remove the horn in thin layers till we note a change in its colour or texture, or

until it is so thin that it yields to pressure. If we find horn stained dark red we know the sensitive parts have been bruised, and if the stain only affects the layers of horn immediately related to the sensitive sole we know the injury is of recent date. How shall we proceed with these conditions? Is it good surgery in such cases to continue paring away the stained horn until we reach the sensitive parts? The answer to this question depends upon the changes that have resulted from the bruise. The stained horn suggests that we have some effusion between the sensitive structures and the horny covering. If the effusion is only serum and not in great quantity the horn should not be cut through. If the effusion be extensive so that a considerable portion of horny sole is under-run, I think it is right to cut through the horn and permit the fluid to escape. If the bruise has resulted in suppuration there is no question as to the necessity of giving vent to the imprisoned matter at once.

When we are all theoretically agreed about these "ifs" our practice may not be uniform, because the condition under the horn is only known when we have cut through it. Probably the amount of lameness shown and the degree of pain evinced when pressure is made over the thinned horn are the best guides to what changes have taken place. If lameness is slight I do not think we are justified in cutting through the horn. Our course is to remove all pressure by removing the shoe. To remove all pressure by removing the shoe. To rest the horse and foment the foot. If there is no change for the worse in twenty-four hours we may conclude that pus has not been formed, and that resolution will follow. If the lameness and pain increase we must cut through the horn and be sure of the condition within.

Just one practical difficulty meets us—that some horses are only slightly lame when the bruise has resulted in suppuration, and others are exceedingly lame when only serous effusion with more or less hæmorrhage has taken place. If we fail to liberate suppuration through the sole it will liberate itself between hair and hoof. In some cases veterinary attention is only called to the case when swelling and soreness at the coronet show that exit for matter will inevitably be afforded at that part whether we cut through the sole or not. Should we cut through in these cases? I think we should, although in many cases very little fluid is found to evacuate.

Different men have different methods of cutting away the horn in search for a bruise or for the purpose of giving exit to the results of injury. Some pare, some dig. There is a right way and a wrong. To dig a hole through solid horn with the point of a drawing knife may afford exit for matter, but it is a wrong way. It does not decrease the tension on swollen structures, and it rather favours the protrusion of inflamed sensitive tissue. The right way is to remove the horn in thin layers over the suspected surface. We thus see the whole extent of the discoloured part, and even when we decide not to cut through to the sensitive tissues we afford some relief to the pressure of effusion by permitting the horn to yield a little. Whether we pare or dig, it is well to remember that good surgery is conservative, and that as little damage as possible should be done to the hoof. Perhaps the greatest amount of useless damage is occasioned by unnecessary destruction of the wall at the heel.

TREATMENT.

So far I have directed attention to diagnosis; now let us go on to the treatment of bruises. A slight bruise merely requires the removal of

pressure. A further stage—in which serous effusion has been plentifully thrown out—requires removal of pressure and removal of horn till only a thin protecting layer is left. When the thinned horny covering is bulged we suspect the effusion is great, and probably a portion of sole is under-run. These cases recover in time when no exit is given to the effusion, but they recover more rapidly if they are drained by cutting through the horn.

The suppurative stage of a bruise requires that exit should always be given through the horn to the collected fluids.

When we have given exit to pent-up fluid—whether serous or purulent—the next step is to prevent septic organisms reaching the injured part, and this brings us to a point in practice where some disagreement is probable. Twenty years ago the application of a poultice invariably followed the evacuation of fluid from a bruised foot. This year probably few young men adopt it.

In cases where a doubt exists as to the necessity of cutting through the horn a poultice for twenty-four hours is useful. It softens the horn, and the heat and moisture do something to allay pain. In no case after horn has been removed and cut through over a bruised part of the foot can I imagine that poulticing is good treatment. The bare sensitive tissues only want protection from injury and protection from septic invasion. This is best supplied by cotton wool or oakum saturated with some antiseptic fluid and kept in its place by a bandage or by a shoe and splints.

One effect of inflammatory effusion from the sensitive foot is to separate the horn at the part. Sometimes this separation is very extensive, and if the cause be continued we may have the whole sole under-run. When suppuration takes place pus is driven by its own increase of bulk to move in the path of least resistance. It passes up from the heel between the sensitive and horny laminæ till it finds an exit between hair and hoof. Even these cases are usually simple if treated early and properly. A bruise may have been so violent or repeated as to cause intense inflammation leading to necrosis of tissue. Laminæ, or even bone, may be the seat of necrosis, and then we have the condition which accounts for nearly all the lengthy and intractable cases arising from bruise.

The removal of necrotic tissue is necessary before a cure can take place. Small portions of dead soft tissue are naturally removed by the process of suppuration. Even portions of dead bone are usually, in time, thrown off in this way, but the process is slow and, under hoof, liable to be accompanied by the spread of septic inflammation to joints or thecæ and so render the patient useless.

It has been said, "Once a corn always a corn." This statement impresses itself on the memory by its brevity, and is unfortunately too often found correct in practice. A simple "corn" is readily curable, and the cure should be permanent. No doubt a bruised part is for some weeks or even months more liable to suffer from very slight pressure than a healthy part. The inner heel of the foot is always liable to improper pressure from the shoe, and the inner heel when it has once been bruised—and more especially when the protecting horn has been ruthlessly cut away—is very susceptible to further injury by even slight causes.

When an ordinary corn has been treated, lameness quite got rid of, and the sensitive structures are again covered and protected by a thin layer of horn, the patient must resume work. For work he must be shod, and in many cases the form or fit of the shoe is responsible for a renewed injury.

It is easy to fit a shoe so that it has no pressure on the angle of the sole. But this is not enough. The portion of wall contiguous to the bruise must also be relieved of all bearing on the shoe, especially when it has been deprived of all support on the inner surface. We frequently see a heel so pared that the wall is left a narrow ridge nearly three-quarters of an inch high. Bearing on this by a shoe is simply an evil, as the weakened wall yields either outwardly or inwardly, causing fresh damage to the bruised parts below. The necessary paring of a heel, either for diagnostic or curative purposes, in the treatment of corn should not injure the wall in the least. The extremity of the wall—where it turns to meet the bar—should be quite intact and capable of taking a share in the bearing of a shoe. This bearing on the extreme point of the wall prevents the irregular downward movement of the foot, and it is so far behind the bruised parts as not to convey any pressure to them. The portion of wall contiguous to the corn—say from half an inch in front of the extreme posterior point to an inch or an inch and a half forward, should be relieved of all pressure. As soon as the bruised heel has sufficient horn to cover it, and so protect it from loose sharp stones, the best shoe to use is a three-quarter shoe. With it no pressure on the heel can occur, and in two or three shoeings we have a perfectly sound heel capable of carrying an ordinary shoe. There is a most illogical custom in some shoeing forges of paring out deeply a heel that has once had the misfortune of being bruised. Every month the farrier carefully removes the horn which nature has supplied for protection, and seems to think he is removing a noxious material. This custom more than any other has given rise to the error that "once a corn always a corn."

Bar shoes are often used for corns. I know of only two conditions where they afford any superior bearing to an ordinary shoe—(*a*) in cases where both heels are bruised; (*b*) in cases where the horn at the inner quarter is broken away so as to offer no firm bearing surface. A bar shoe in any case, to do good, must have a firm frog to rest upon. A bar shoe without a bearing on the frog is simply a useless thing.

A shoe "eased" at the heel, so that it not in contact with the wall when the foot is off the ground, is a snare to the unwary. It permits the downward movement of the foot each time the weight of the horse rests on the foot, and too often the extreme posterior bearing of such a shoe is near the bruised parts. If a shoe is eased at the heel the "easing" should commence well in front of the injured spot.

In those cases where suppuration has occurred and where the horn has been so much removed as to leave vascular tissues unprotected, a shoe may be applied early, so that a covering of tow and tar with a leather sole may afford protection.

In conclusion, gentlemen, I feel almost inclined to apologise for so elementary a paper on such a simple matter, but I refrain from doing so until after the discussion, because I still think a proportion of bad practice exists in the treatment of these cases. Too much poulticing and too much paring is done, whilst insufficient care is given to the exactness of fit of the shoe.

REMOUNT STATION IN AMERICA.

THE English are again before the public eye at Chalmette. Every day at twelve o'clock noon there is gathered around a modest board in the Port Chalmette Hotel a small squad of British army officers and veterinarians who are just now being talked about around the globe. They are seated within a stone's-throw of the historic spot where General Pakenham had his headquarters before the battle with Andrew Jackson. These latter-day Britishers are talking horse and mule, and discussing the day's operations in the South African traffic, while the cable and the telegraph are ticking off columns about the British army post that is being maintained on American soil at Port Chalmette.

Is there an army post at Chalmette? Hundreds of curious people are going down there to find out. The Britishers say there is not. The owners of Port Chalmette say there is not. Sheriff Nunez, of St. Bernard parish, says there is not. The people who sell the mules, the feed, the fodder, and furnish the thousands of labourers, say there is not. General Samuel Pearson, the accredited Boer envoy to the United States, says there is. He makes it strong. Governor W. W. Heard, of Louisiana, says there is. Muleteers and men who have shipped on the transports to South Africa say there is. Certain merehants in the city of New Orleans say there is, and that they know of specific cases where munitions of war have been taken aboard transports at Chalmette. The United States Government at Washington has tacitly given the impression that the neutrality laws are not being broken. They have not come direct to the point and said whether a military post is being operated at Chalmette or not. But they will. Representatives of the Government have come here to investigate. "We are ready for the Government's representatives at any time," said Charles W. Towsley, superintendent of the terminals at Port Chalmette, yesterday. "So far as the property of the New Orleans Belt and Terminal Company is concerned, it is always open to visitors. It is open to inspection day or night. There is no infringement of the federal laws going on here, and inspectors will be given a welcome at any time. They will have free access to everything about the port. I can say from my personal knowledge that nothing in the shape of munitions of war has ever gone away from these wharves. I am always here, and I know what goes aboard the transports. The business which they are carrying on here is legitimate trade, a matter of buying from the United States and shipping away." Two staff men from the *Picayune* listened to this statement of Superintendent Towsley from the balcony of the Port Chalmette Hotel, while the British officers were still inside at their noon-hour luncheon and daily conference. In a few minutes they came out. Their horses, docked and shorn down to the regulation English custom, were mounted, and they rode away to the different stations.

Captain R. L. Fenner, embarkation officer at the port of New Orleans, is in charge, and is the personal representative of Colonel U. De Burg in this city. Captain W. G. Eden is the remount officer in charge. Prof. W. R. Davis is the chief veterinarian in charge. Captain E. T. Aspinwall is the officer in charge of all the feeding. Those four—all young men—are at the heads of the departments at this port.

Colonel De Burg is the remount officer commanding in the United States. His headquarters are in Kansas City, and he makes a trip down

here once every two or three weeks. Each of the departments has a number of subordinate officers and assistants under the chief. In all, there are probably a dozen or fifteen of the remount officers and veterinarians at this port all the time. Each transport carries a conducting officer and a veterinarian, it being the duty of the former to have military command of the ship and to turn her over to the authorities in the South African port. It is the mission of the veterinarian to attend to the animals and to keep them in good condition. Each ship carries one foreman and one assistant foreman of muleteers, and one muleteer is employed for every fifteen head of horses or mules.

Following in the wake of the British officers as they rode away from the temporary headquarters in the Port Chalmette Hotel, the correspondent and photographer set out to find what actually exists at Chalmette, never losing sight of the question that is now puzzling two of the most powerful nations of the earth—Is Chalmette a British military post? The place where the Britishers gather every noon is half-way between the "range" and the wharves. Over at the wharf a busy scene was encountered. Three immense ocean-going steamships—three of the largest transports in the service—the "Mechanician," the "Michigan," and the "Honorius," lay at rest, tied to the wharf by long rope hawsers. The great water frontage, 1950 feet in length, was a hive of industry. Lumber was being carried and wheeled into the holds of the transports for fitting up the stalls and apartments. Men were hammering and pounding. A switch engine was punching the cars about the wharf, setting off loaded ones, and taking empties back into the yards. Other crews were unloading cars of feed. Hay, oats, and bran are brought in by the train load. The three ships at anchor are being fitted up as fast as possible, and will be loaded with stock in a few days. The strike of the ship-liners has delayed the work, but it is now gaining force every day, and yesterday a half-hundred men were working on the "Mechanician."

The transports are closely guarded. Sheriff Nunez, of St. Bernard, has given the British ample protection, and has detailed some twenty special deputies to guard the vessels day and night. This has been done ever since the attempt to blow up the "Mechanician" with dynamite some time ago.

No one can board a transport without he bears the proper papers. "Your business?" asked a guard, when an attempt was made to enter the hold of one of the monster crafts. He was told. "No one is allowed aboard," he replied. "Our orders are very strict." The man with the camera drew near. "Nobody is allowed to take one of those on board either with or without papers," said the guard, pointing to the picture machine. It seems that the camera man must be like the label on the bottle when he goes to Chalmette. But he can snap everything in sight so long as he remains on the outside. Hundreds and hundreds of visitors, every third man carrying a "shooting" machine, swarmed on the wharf. The trains from the city turned them out in droves, and they found interest in the long wharves. Newspaper correspondents from the four quarters are at Chalmette. One of the St. Bernard sentinels objected to having his picture taken. Some of the others were caught unawares.

Chief Deputy Sheriff T. J. Serpas is in charge of the Chalmette deputies. Among those on this special force are: William H. Main, Victor P. Nunez, Edgar Ruiz, Pascal Japcke, Walter Roy, V. M. Guiterrez,

Jos. Estopinal, A. Estopinal, Henry Morales, Alcide Hernandez, Edward Foundriat, Harry Bucher, Fred Andry, and Fred. Inbau.

Under the sheds are piled the feed that will be loaded on the transports to feed the stock en route to South Africa. From Superintendent Towsley some interesting facts were learned about the immensity of this business. Every transport that is fitted up here represents an expenditure of about $8000. Each ship carries twenty-five cars of feed. Each ship goes out of port with from 3600 to 4000 tons of coal in her bunkers, all purchased here. The fuel costs $3·60 per ton. Then the price of wheeling and handling must be added to that. The New Orleans Belt and Terminal Company is handling on an average of 100 cars a day on account of the transport business. The business is estimated to be worth $500,000 per month to the port of New Orleans, and to the other people contributing to the traffic. Leaving the wharves, the centre of interest lies in the "range," as it is called at Chalmette. This is where the stock is kept; that is where it is penned, housed, and cared for until it is loaded on the great ships. The "run" extends from the wharf to the range. It is a narrow passageway, built of pine boards, and stayed with strong wire. Once under the sheds the run opens out into a large pen, where the stock is held, until finally shot up through the narrow chutes into the ships. The run from the stables to the ship, when filled with moving mules, presents a very animated scene. It is about three-quarters of a mile in length. Once in the range, the pens open out into the main run, and in that way every portion of the stabling quarters are in direct communication. About 2000 mules and 1000 horses were in the range, when the *Picayune* men were there yesterday. Most of the horses are from the far west, and are the regulation English remount ponies. They are hardy, tough, little horses from the wild plains of Montana and Colorado. "I'm sorry," said an officer, who stopped the newspaper man at the entrance of the range, "but no one can enter here. The only way you can get in is to get a written order from Captain Fenner at the hotel. If he says all right, it goes. Otherwise, instructions are that no one can get in. This section of the property has been leased by the British from the Chalmette company and is out of their control. The army people are in absolute control of it." Special officer M'Donald, of New Orleans, is in charge of the officers guarding the range. He says he is there by instructions from his chief, and that he cannot allow any one to enter. When Superintendent Towsley said Port Chalmette was open he evidently meant that section which was controlled by his company. The portion under lease by the British is not open to public inspection. They guard it as an army secret. No one is permitted to get through the lines any more than were it the picket line of an army in camp. The stables, the "sick lines," as called by the veterinarians, are closed to the public eye. The range takes an enormous space. It is about 1800 by 2000 feet, if one should care to measure it. Two rows of the old cotton storage houses are used for stables, for the hospitals, and for the housing of other things not fit for the open air. Mules are kept on one side of the run and the horses on the other. The tracks of the railroad come up to the north end of the run, and there, under a spacious shed, the animals are unloaded through chutes. They are inspected by the veterinarians and passed into the yards. If an animal is found to be sick he is sent to the hospital and there treated. They receive the very best attention known. The English are natural-born

hostlers and they know how to care for the stock. On an average about fifty men are employed to feed the stock in the range at Port Chalmette. At five o'clock every evening the officers in command leave the place and return to the St. Charles Hotel in the city. With their departure the strictest of orders are issued for the guarding of the stock during the night. No better place in the universe could be found than the old cotton sheds and the buildings at Chalmette for carrying out an army post and the sequestering of military supplies, but that fact does not imply that such is being done. The facilities, however, could not be better, and the place is now securely guarded against the intrusion of newspaper men and of photographers. However, pictures can be secured. The roofs of the buildings are low, and, with some short ladders, they are easily scaled. The *Picayune's* art man caught some good views of the range from the roofs, and they gave a general idea of the business in full operation. The inspection of a train load of mules was going on while the *Picayune* men were on the scene. The business of the British Government was transferred to Port Chalmette, November 15th, from the stock landing and Southport. It has been running full blast ever since.

Port Chalmette has an interesting history. It is the deep-water port established ten miles below the city for the handling of cotton. Some of the finest compresses and cotton sheds in the world were built there. The plant, as it now stands, represents an output of $2,500,000. The first vessel landed at its wharf December 22, 1895, when the "Ernesto" came there for her cargo of cotton. There are 750 acres of land covered with buildings and cotton sheds, while the entire place covers an area of 2350 acres. The new company is styled the New Orleans Belt and Terminal Railroad Company, of which W. C. Dotterer is the president. The Port Chalmette Hotel, where the British officers make their headquarters while in the port, is in the efficient hands of Ben Walker.

The mule business first started at this port in the summer of 1899. Major H. J. Scobell, Captain S. M. Smith, the big man, and Captain Marsham, were the original trio to land here, and to enter in the greatest secrecy for some time. Then their secret got out. Major Scobell was the pioneer, and he has many friends here. He belonged to several of the clubs, and it was with regret that he finally asked to be sent to the front, where he is now. Since his going to South Africa the Scots Greys, his regiment, have been in a number of sharp engagements, and the major was wounded once or twice.

During the thirty odd months that the traffic has been carried on through the port the British Government has expended something like $30,000,000 in this country. They have shipped 61,449 head of mules, and 93,833 head of horses, or a total of 155,282 head of stock. It has required 163 transports to carry the stock, and the traffic has given employment to some 18,000 American muleteers.

(*The Picayune*, New Orleans, 9th April 1902.)

THE TUBERCULIN TEST.

THE Joint Committee on Education in Agriculture of the University of Aberdeen having had several failures to react when testing animals for tuberculosis, but which animals on post-mortem examination were found to be tubercular, determined some time ago to continue testing animals and making post-mortems soon afterwards, so as to clear up any doubt about the efficacy of the test, and requested Mr. M'L. Young, F.R.C.V.S., their Lecturer in Veterinary Hygiene to the agricultural students, to carry them out.

We herewith append Mr. Young's tables of results, which are most interesting and complete, but what is most astonishing to us is that in only two of the cases of tuberculosis did the temperature at any time rise to above 105°, and that in no single case was there a temperature of over 106°. This is contrary to our own experience, as we frequently have temperatures of over 106°.

In one case quite recently we had a temperature chart as follows, and we may add we used two tested thermometers:—

No.	Description.	Age.	Previous Temperature.	Dose.	Temperature Hours after Inoculation.				Post-Mortem Condition.
					12.	15.	18.	24.	
1	Red cross, small, .	9	101·8	50 m.	*103·9*	*104·0*	*103·5*	*102·1*	*Tuberculous.*
2	White polled, .	8	102·0	,,	102·6	102·0	102·2	102·1	Sound.
3	White cross, . .	6	101·8	55 m.	*104·6*	*104·0*	*102·8*	*102·0*	*Tuberculous.*
4	Red ,, . .	8	101·8	60 m.	101·4	101·8	101·8	101·6	Sound.
5	,, ,, . .	12	101·0	55 m.	101·8	101·9	101·0	101·4	Sound.
6	,, polled, . .	10	101·5	60 m.	102·0	101·6	101·6	101·7	Sound.
7	Cross, . . .	9	101·9	65 m.	102·1	102·0	101·8	102·0	Sound.
8	White cross, . .	12	101·0	70 m.	101·7	101·4	101·5	101·6	Sound.
9	Red horned, small,	12	101·8	60 m.	*102·0*	*104·5*	*104·4*	*102·1*	*Tuberculous.*
10	Cross, . . .	7	101·3	65 m.	101·7	102·0	102·0	101·8	Sound.
11	Brindled cross, .	7	101·5	70 m.	101·0	101·2	101·1	101·3	Sound.
12	Red Cross, . .	10	101·4	,,	*104·8*	*104·5*	*104·9*	*102·9*	*Tuberculous.*
13	Black heifer, .	2	101·2	45 m.	*103·1*	*103·1*	*102·7*	*102·0*	*Tuberculous.*
14	Roan cross, . .	8	101·2	60 m.	*102·6*	*103·0*	*104·4*	*103·8*	*Tuberculous.*
15	Red Irish, . .	15	101·8	16 m.	101·4	101·1	101·0	101·2	Sound.
16	,, cross, . .	12	100·4	20 m.	*103·6*	*103·9*	*104·3*	*103·0*	*Tuberculous.*
17	Black polled, .	10	101·0	17 m.	101·6	101·7	101·5	101·4	*Tuberculous.*
18	Roan cross, . .	10	101·4	20 m.	101·0	101·1	101·2	101·0	Sound.
19	White shorthorn, .	11	102·0	18 m.	101·8	101·8	101·7	101·6	Sound.
20	Black Orkney, .	8	101·0	16 m.	101·0	101·1	101·0	101·0	Sound.
21	Red Irish, . .	6	100·7	17 m.	*102·8*	*103·4*	*104·9*	*104·5*	*Tuberculous.*
22	Shorthorn, . .	16	101·5	20 m.	*102·6*	*103·5*	*102·9*	*102·5*	*Tuberculous.*
23	Black polled, .	10	100·9	18 m.	*103·8*	*104·0*	*105·7*	*102·1*	*Tuberculous.*

No. 1. Lungs and bronchial and mediastinal glands affected.
No. 3. Lungs and bronchial and mediastinal glands affected.
No. 9. Lungs and bronchial and mesenteric glands affected.
No. 12. Lungs, bronchial and mediastinal and mesenteric glands, pleura and udder affected.
No. 13. Lungs affected, and growth on lower jaw.
No. 14. Lungs, pleura, and bronchial glands affected.
No. 16. Lungs, pleura, bronchial glands, diaphragm and peritoneum affected.
No. 17. Bronchial gland caseated and encysted.
No. 21. Bronchial and mesenteric glands affected.
No. 22. Lungs, bronchial and mesenteric glands, and liver affected.
No. 23. Lungs, pleura, and bronchial glands affected.

No.	Description.	Age.	Previous Temperature.	Dose.	Temperature Hours after Inoculation.				Post-Mortem Condition.
					12.	15.	18.	24.	
24	Irish, . . .	10	101·3	18 m.	*104·2*	*104·1*	*103·5*	*102·8*	*Tuberculous.*
25	Blue polled, . .	9	101·0	,,	101·7	102·0	101·8	101·5	*Tuberculous.*
26	Roan cross, . .	8	100·5	,,	101·0	101·2	101·0	101·1	Sound.
27	Black & white cross,	6	101·2	20 m.	101·6	101·5	101·5	101·2	Sound.
28	Red cross, . .	10	101·0	18 m.	102·1	101·3	101·8	101·5	Sound.
29	Black Orkney, .	15	102·1	20 m.	*102·4*	*102·9*	*104·0*	*103·2*	*Tuberculous.*
30	Red cross, . .	5	101·4	17 m.	101·5	101·9	102·0	101·5	Sound.
31	Shorthorn cross, .	7	101·9	20 m.	102·0	101·7	101·8	101·8	Sound.
32	Red cross, . .	12	100·8	18 m.	101·0	101·6	102·2	101·9	*Tuberculous.*
33	Small cross, . .	7	102·0	16 m.	*103·7*	*103·9*	*104·1*	*102·5*	*Tuberculous.*
34	White shorthorn, .	10	101·0	20 m.	101·9	101·7	101·8	101·8	Sound.
35	Black polled, .	6	102·1	18 m.	*104·0*	*104·6*	*104·9*	*103·5*	*Tuberculous.*
36	White horned, .	8	100·7	20 m.	*102·3*	*103·0*	*104·2*	*103·5*	*Tuberculous.*
37	Red cross, . .	4	101·4	18 m.	101·3	101·5	101·1	101·1	*Tuberculous.*
38	Black polled, .	11	101·0	20 m.	100·7	100·6	101·1	101·2	Sound.
39	Small Orkney, .	10	102·1	17 m.	102·0	102·1	101·9	101·8	Sound.
40	Blue polled, . .	12	101·2	18 m.	*104·3*	*105·1*	*103·9*	*102·5*	*Tuberculous.*
41	Black cross, . .	10	100·9	20 m.	101·1	101·2	100·9	101·0	Sound.
42	Red horned, . .	7	101·8	18 m.	*102·9*	*103·6*	*104·9*	*104·2*	*Tuberculous.*

No. 24. Bronchial and mesenteric glands and liver affected.
No. 25. Lungs, pleura, pharyngeal and mesenteric glands and udder affected.
No. 29. Lungs, pleura, bronchial and mesenteric glands, peritoneum, and udder affected.
No. 32. Lungs and pharyngeal and mesenteric glands affected.
No. 33. Lungs, pleura, and liver affected.
No. 35. Bronchial, mediastinal, and mesenteric glands affected.
No. 36. Nodules in lungs and liver, and left hind quarter of udder affected.
No. 37. Lungs, pleura, bronchial and mediastinal and mesenteric glands, and uterus affected.
No. 40. A few nodules on right lung.
No. 42. Lungs, bronchial and pharyngeal glands affected.

Extracts.

PSEUDO-RINDERPEST IN INDO-CHINA.

BY MM. J. BLIN, VETERINARY SURGEON IN 2ND FRENCH ARMY, AND CAROWGEAN, PASTEUR INSTITUTE, NHA-TRANG, ANNAM.

AMONGST the diseases that attack bovines in Indo-China is one improperly called "cattle plague," that causes severe loss to breeders.

It makes its appearance yearly, but varies greatly in virulency, sometimes the outbreak being so mild that it is difficult to trace from whence it comes, at others being so severe that each animal moved into a healthy area becomes a fresh centre of contagion. In reality, the disease is permanent in a sporadic form, and in travelling about the country one constantly sees emaciated animals with running from the nose and eyes. Although there is no epizootic present at the commencement of the rainy season, there are numerous outbreaks in different places, attacking both oxen and buffaloes.

Symptoms.—In the buffalo the acute form only is seen. The symptoms develop suddenly, with a rise in the temperature to 39·5, 40°, or 40·5 Centigrade, acceleration of respiration, congestion of the mucous membranes, loss of appetite and dullness. The nostrils are dilated, giving exit to a discharge at first of serum, but afterwards thick and yellow; there is salivation, and abundant flow of tears, cold horns, and dry muzzle. The bowels are at first constipated, but afterwards diarrhœa sets in, the excrements being frequently stained with blood, and during the whole duration of the attack there is a short painful cough. In some cases softening of the epidermis has been observed, the slightest pressure of the finger causing it to exfoliate.

The rate of mortality is very variable; in some outbreaks 90 per cent. die, in others hardly any, and it is rare to see a chronic case.

In the buffalo the temperature gives but little indication of the gravity of the case, many dying without it rising at all.

In the ox the symptoms are the same as in the buffalo, viz., congestion of the mucous membranes, disturbance of respiration and circulation, loss of appetite, discharge from the nose, lacrymation and salivation, constipation at first, followed with profuse diarrhœa, which may turn into dysentery, cough, and the eruption of papules, usually on the back, shoulders, and croup, also rise in temperature, but this is not constant.

In the chronic form the animals lose greatly in condition, cough frequent, crepitant rales, hard on auscultation, and dullness over portions of the lung on percussion. The appetite is capricious, but as a rule there is an absence of meteorisation. Diarrhœa is chronic, and the temperature subject to great variations, the eyes are sunken in the head, and the flow of tears excoriates the skin. The duration of the attack is very variable, but a considerable percentage of cases recover, although the cough may continue for a long time.

In certain cases the chronic form is extremely benign and only affects the intestines, the animal appearing in perfect health, with the exception of a little blood being passed.

Articular lesions are rare, although chronic arthritis of the hock has been seen.

Lesions.—The lesions of the acute form are congestive and hæmorrhagic, but it is remarkable that the muscular system is not implicated.

The superficial vessels are prominent and gorged with blood, and the serous cavities contain a small quantity of fluid. The lungs are congested, and in the buffalo the interlobular spaces are often emphysematous, the bronchial and tracheal mucous membranes are studded over with patches of ecchymosis, also on the endocardium, especially in the neighbourhood of the valves.

The mucous membrane of the intestine is congested and ecchymotic, the submucous tissue is infiltrated, and the spleen engorged, although but little increased in size, and the same is the case with the kidneys and liver.

The lymphatic glands are tumefied and hæmorrhagic on section, the meninges of the brain being studded with ecchymosed patches.

In the chronic form the lesions are entirely confined to the lungs and intestines. The pleural cavity sometimes contains some fluid, and more rarely it is thickened and covered with false membranes. The lung is congested—firm to the touch and elastic,—the patches of pneumonia are

generally circumscribed and scattered irregularly over the mass, the surface being often studded over with infarctions.

On section the pneumonia patches have a red-brown colour, and in certain cases strongly resemble pleuro-pneumonia lesions, the visceral pleura being infiltrated with a clear-coloured serum. The interlobular septæ are also infiltrated at the seat of the hepatised patches with serum, which freely escapes on section.

The smaller bronchii are obstructed with flakes of mucus, and sometimes patches of ulceration are observed in the larger ones. If the disease has lasted any time, collections of pus of a variable size will be found in the lung tissue, usually in process of caseification.

The bronchial lymphatics are enlarged, and on section give exit to a clear or slightly opaline fluid.

The abdomen may contain fluid, and the peritoneum be covered with false membranes. The mucous membrane of the omasum is congested and ecchymosed, likewise the intestine, and the mesenteric ganglia are enlarged.

EXPERIMENTAL RESEARCH.

The researches by MM. Carré and Fraimbault have shown that the blood of diseased animals is virulent at certain stages only of the disease, viz., when the temperature is highest, and that it can then be reproduced in both buffalo and ox calves and in the adult buffalo; the adult ox appears to be much less susceptible, and positive results are not constant. The subcutaneous injection of virulent blood into the calf gives rise to variations of temperature, of which the chart is a fair sample. The rise begins about the fourth and lasts for several days. There are, however, variations; sometimes it rises on the second, and in other cases not till the ninth day, but it seems that the larger the quantity of blood used the sooner the rise takes place. It may also rise before death, though it has, on the contrary, been seen to fall.

The severity of the attack after the injection of virulent blood is very variable,—extending from merely a slight rise in temperature, without any other disturbance, to nasal discharge, lacrymation, diarrhœa, salivation, and cutaneous eruptions.

The blood of the inoculated animal is itself virulent as soon as the temperature reaches 40° to 40·5° Centigrade, so that it is easy to keep up a series of infections, but by passage through a series of subjects the blood loses its virulency, and only a slight elevation in temperature is the result; but if *large* quantities of blood are used with young subjects the virulency is prolonged, but experimental affection thus produced differs from the natural in there seldom being any chronic or pulmonary lesions.

The serum of an animal that has recovered from a natural attack, and which has been inoculated with large doses of virulent blood, possesses protective properties (Carré and Fraimbault), and injection into the trachea lessens the period of incubation. Rubbing the nasal discharge into the buccal membrane is not a certain means of reproducing the disease, but introduction of it into the nasal cavity is. If it is introduced into the trachea positive results generally follow, but not from mere cohabitation.

DIFFERENTIAL DIAGNOSIS.

This in Indo-China is of the greatest importance, as the sanitary measures against rinderpest comprise slaughter.

In the buffalo this is somewhat difficult. The nasal discharge, salivation, and lacrymation are all symptoms of cattle plague, but the croupous lesions of the trachea and bronchii are absent, also the membraneous patches that are adherent to the intestinal mucous membrane, likewise the process of mortification and caseification. On the other hand, it is established that the buffalo is not susceptible to cattle plague, but that, in Indo-China at all events, it is to the disease under discussion.

In cattle plague the blood is virulent throughout the entire attack, likewise the lesions, and this virulency persists in the cadaver (M. Chauveau). In pseudo cattle plague it is only exceptionally that the lesions are virulent, and at a certain stage of the disease inoculation with blood proves that the infective bacteria are only susceptible of remaining in it a short time. This is the case in other allied diseases, especially canine distemper. The blood is inactive after it has been left from three to five days in sealed pipettes, whereas in cattle plague it preserves its virulency for a long time.

If both buffaloes and bovines are attacked, in the former the acute form will be observed, in the latter the pulmonary. This will show that they are only variations of the same disease, and will assist in diagnosis, as the presence of pulmonary complications will permit of the exclusion of cattle plague.

Both clinical and pathological evidence lead to the conclusion that the disease is a pneumo-enteritis, or, to more clearly define it, hæmorrhagic septicæmia of bovines, and this is confirmed by bacteriological tests.

ETIOLOGY.

Microscopical examination of the mucus plugs that block up the smaller bronchii shows a large number of bacilli that will not take Gram's stain. It is also found in fresh nasal discharge, but not in blood.

Cultivations on gelose with bronchial exudation, nasal discharge, and fluid from the pulmonary lesions, give a number of very small transparent colonies that have no tendency to extend. Cultures from the blood are usually negative.

Subcutaneous inoculation with 1 cc. of virulent blood into the rabbit always gave positive results.

1. On 2nd August 1901 a rabbit was inoculated with 1 cc. of virulent blood. The temperatures were as follows :—

August	29.	Morning 39.7 C.	Evening 40.3 C.
	30.	39.8	40.2
	31.	39.7	40.7
Sept.	1.	40.	40.8
	2.	40.3	40.2
	3.	40.1	40.3
	4.	39.7	40.1
	5.	40.	40.5
	6.	40.2	41.
	7.	41.5	42.3
	8.	40.7	40.8
	9.	40.	41.4

The rabbit died during the night of September 9th, having nasal discharge and profuse diarrhœa. The following lesions were present :— Fibrous pericarditis, circumscribed patches of pneumonia, well-marked

fibrous peritonitis, spleen of a dark violet colour, but not enlarged, kidneys and liver congested. In the blood and material from the lesions were large numbers of micro-organisms.

A second rabbit was inoculated with 1 cc. from No. 1, and died in a short time.

No. 2. On 1st October a rabbit was inoculated with 1 cc. of blood from No. 2; it died on October 7th. The temperatures were as follows:—

October 1.	Morning 39° C.	Evening 39.4 C.
	39.2	40.4
3.	39·5	40·7
4.	40·8	41·2
5.	41·4	41·4
6.	42·1	41·9
7.	41·4	40·8

One minim of pericardial fluid injected intravenously killed the rabbit in three days; and inoculated rabbits contaminated healthy ones that were in contact.

Five cc. of virulent blood injected into the peritoneum of guinea-pigs killed a certain number—some in twenty-four hours, others in three to four days. On post-mortem examination the peritoneum was found to contain a large quantity of rose-coloured fluid in which there were a few leucocytes, but a large number of the specific bacilli; the liver, kidneys, and lungs were congested.

CHARACTERISTICS OF THE MICROBE.

It is an immobile cocco-bacillus that does not take Gram's stain, but otherwise colours well, with a clear centre. This is specially noticeable when obtained from the blood of the rabbit. On gelatine it grows in transparent colonies, which become opaque as they get older, and which have no tendency to increase in size. Puncture cultivations on gelatine give a series of granular growths.

Broth is rendered turbid, and a deposit takes place; the medium has a peculiar smell.

There is no characteristic growth on potato, and milk is not coagulated.

VIRULENCY.

The virulency of the microbe is very variable, and its passage through small animals diminishes it for bovines as a laboratory experiment.

EPIDERMIOLOGY.

Each year the disease manifests itself in various parts of the country, and at intervals of five or six assumes a deadly form, and this is spread by herds coming from the Chinese frontier.

In May 1901 there was a severe outbreak in the province of Bac Lien, at the end of a dry season, when the first rain fell, more than 2000 buffaloes perishing, but the neighbouring provinces escaped. In July of the same year it appeared in the suburbs of the capital, Hanoi, with great severity, but strict sanitary measures prevented its spread. On the day that the movement of cattle was stopped, two cows were sent by the native owner to a place 100 kilometres away, which had been in contact. They introduced the disease into a large herd, amongst which it caused great loss.

The disease is endemic in a chronic form amongst herds of working oxen that are poor in condition, such as those used by the military authorities, and the "epizootic dysentery" of our military veterinary surgeons is without doubt a phase of it; and if careful search is made, an animal with a high temperature, whose blood will reproduce the disease in the calf, can invariably be found. These facts show how variable the virulence of the microbe is.

M. Schein has noticed a somewhat uncommon variation which, to a certain extent, resembles the œdematous form of hæmorrhagic septicæmia. It develops in 24 hours, and is characterised by nasal discharge, lachrymation, salivation, and œdema in the sub-glossian region. It is almost always fatal. The bacillus is active in the calf, rabbit, and rat, killing them in 24 hours, and in various culture media grows in the manner before described. It is far more virulent than in the common form.

By exposure to atmospheric oxygen attenuation of virulency is attained, rabbits not being killed for eight days.

SUMMARY.

The following conclusions have been arrived at:—

1. That the disease known in Indo-China as cattle plague is a hæmorrhagic septicæmia.
2. That slaughter is useless, and the destruction of hides unnecessary.
3. The most efficacious sanitary measures are segregation and prevention of sale, except for immediate slaughter.
4. Injection of artificial serum or defibrinated blood, as suggested by M. Signieres is of service in the treatment of chronic cases.

(*Recueil de Médecine Vétérinaire*, 18th Feb. 1902.)

JOSHUA A. NUNN.
Vety. Lieut.-Colonel.

ATROPHY OF THE OPTIC PUPILLÆ FROM INJURIES TO THE CRANIUM.

BY M. P. PAYROU, 15TH DRAGOONS.

BLINDNESS following on injuries to the cranium, especially over the orbital process, without any apparent alteration in the structures of the eye, has been frequently reported in veterinary literature, viz., by Goubaux, Arloing, Servoles, and Cadéac, but before the invention of the ophthalmoscope the seat of the lesion, its nature and pathology were unknown. In human medicine the relations existing between injuries to the skull and the optic nerves are perfectly well known, and in fact paralysis of the various nerves connected with the eye is often used as a means of localising the seat of fractures of the skull. Although injuries do not in the horse so frequently give rise to fractures as in the human being, nevertheless they often cause loss of sight. The following cases perhaps may be of interest, as they to a certain extent illustrate the causes, primary or secondary, of paralysis of the pupillæ, which supervened in the absence of any disease of the globe of the eye. They may also help to throw some light on the pathology of the lesions.

Case I.—Horse, four-year-old. Joined the regiment with the following

note :—"This horse, while loose in a paddock, reared up, and being pushed by a playmate fell back, violently striking the nape of his neck against the ground. After lying in an insensible condition for from fifteen to twenty minutes he got up and with difficulty walked to the stable. The next day there were cerebral symptoms, vertigo, and a tendency to turn to the right. After four or five days there was a certain amount of sleepiness remaining and uncertainty in the movements of the limbs. He was then noticed to be blind in the right eye."

Examined three months afterwards, all that was to be seen was a slight uncertainty and want of co-ordination in the mouth.

There was no difficulty in the movements of the eyes. The right pupil was semi-dilated and slightly sensible to light. Examination with the ophthalmoscope showed the pupillæ to be of a pearl shell whiteness with the vessels spread out like a map, total atrophy of the optic nerve and complete blindness. The crystaline lens and vitrious humor were normal.

The left pupil responded to light but its sensibility was impaired. The pupillæ was pale in colour and the vessels diminished in size, the optic nerve being partly paralysed and the pupillæ in course of becoming atrophied, which became complete a month afterwards.

In this case there was no doubt due to the injury. The cerebral symptoms, immobility of the iris, and blindness in both eyes points to the lesion being either on or behind the "commissura nervi optici," which took place at the moment the injury was inflicted, and consisted of concussion of the brain with effusion of blood and formation of a clot to the right side. This gave rise to descending neuritis, acute and rapid on the right side, slower on the left. The compression consequent on the peduncular will fully explain the cross hemiplegia, which, although only partial, shows itself by hesitation in gait and a slight want of co-ordination in movement.

Case II.—Draught mare, six years old. While in harness was frightened by a motor car, and shying, struck her head against a tree. She fell down and remained stunned and insensible for seven or eight minutes, when she got up and continued her journey.

The next day the owner noticed the drowsy condition of the animal and a swelling over the left orbital process, and asked my advice.

The animal was in a somewhat comatose condition but retained her appetite, and had no difficulty in walking. There was a considerable amount of swelling and œdema over the left orbital process which was painful, the upper eyelid being tumified and the conjunctiva red and infiltrated. I prescribed a saline laxative, warm antiseptic fomentation to the eye, and complete rest.

I again saw my patient six days afterwards. The lesions to the eye had almost disappeared. The eye was clear, and the pupil partly opened and sensible to light. The pupillæ was pale in colour, the vessels scanty and thread-like. Diureties and potassium iodide were prescribed.

The eyes were again examined in twenty days. The left pupillæ was white, the colour regular, but with a total absence of blood-vessels, and completely atrophied ; round its left border were several patches showing degeneration of the retina. The right eye was normal. The absence of cerebral symptoms and atrophy of the pupillæ of the one eye only pointed to the seat of the lesion as being between the optic commissure and the point at which the optic nerve enters the globe of the eye. It is possible

that it may be due to a fracture of the wall of the optic canal, with rupture of the nerve fibres, sheath, and some of the small vessels, an accident which is recognised in the human being. It might also be an intracranial lesion, which being in direct connection with the sheath, caused compression and inflammation of the nerve. Hæmorrhage in front of the optic canal can be excluded, and the accumulation of blood would cause distortion of the globe.

Case III.—While tied up outside the stable the horse reared up and fell backwards, striking his head violently on the pavement, where he remained insensible for a quarter of an hour, when he was got on his legs and removed to the infirmary.

The animal was in an absolutely comatose condition, his movements were inco-ordinate, gait staggering, and respiration short and laboured. Both upper eyelids were drooped, and there was divergent strabismus. The pupils were dilated and insensible to light, and the pupillæ pale, the vessels being of a very small calibre. The symptoms were more pronounced in the right than the left eye.

During the following days the symptoms increased in gravity, being accompanied with attacks of vertigo and succeeding periods of depression. On the fourth day atrophy of both pupillæ was complete. Their edges were regular, but they were white, and there was a complete absence of blood-vessels. The patient died on the morning of the fifth day.

Post-mortem.—Multiple patches of ecchymosis on different parts of the body, and especially the pharyngeal region. There was a fracture existing at the point of union of the basilar process with the body of the sphenoid, more complete on the right than the left side. The dura mater was thickened and covered with hæmorrhagic patches, the arachnoid infiltrated and œdematous, and the pia mater inflamed and of a dark red colour. A large clot involved the third pair of nerves, and extended as far as the pituitary body, which was of a deep violet colour.

These four cases may perhaps help to show that it is possible in animals to localise the seat of certain cranial lesions by the symptoms shown by the eye, although fracture of the cranium is not so frequent as in the human being.

(*Bulletin de la Société Centrale de Médicine Vétérinaire*, March 13th, 1902.)

JOSHUA A. NUNN,
Vety. Lieut.-Col.

A CASE OF COLIC FOLLOWING ON HERNIA OF THE DIAPHRAGM.

AN eight-year-old mare became ill on 1st December at seven A.M., showing signs of violent abdominal pain. The animal threw itself about on the floor of the stall, regardless of external injuries, dashed its head against the partitions, raised itself on its fore-legs, tried to turn round, breathed heavily, and kept groaning loudly. At eleven A.M. I found the animal quiet, so that the owner fancied that improvement had set in. The four limbs were spread out, and the breathing was very laboured—it was a kind of gasping. The whole surface of the body was covered with sweat. Feeling the pulse was out of the question. The heart-beat could not be heard, as all the muscles of the breast and shoulder were affected by the most violent

trembling. The facial expression of the mare was unspeakably distressed, the eyes stared into vacancy with a glassy look. Intestinal sounds were not to be heard, only from time to time a short tinkle was audible, as if a drop of water had fallen on a metallic plate far beneath it. In the rectum no excreta could be reached. Urine was several times discharged, but seemed to cause great pain. An injection of morphia was given to relieve the sufferings of the dying animal, and at one P.M., after making an effort to stand, she fell over and expired.

At the post-mortem, when the abdomen was opened, the intestinal canal was found in abnormal condition. Close to the lower abdominal covering there was presented a lower portion of the colon, recognisable by the presence of muscular bands. When an attempt was made to withdraw this it became noticeable that it was clinging to the diaphragm, or rather was tightly fastened in a hole in the diaphragm. Taking care not to injure the diaphragm, I proceeded to open up the thorax. Inside of this I found the whole of the left upper and lower portion of the colon with the pelvic flexure. This enormous intestinal involution was outwardly of a dark red colour, the vessels were full to bursting, and the intestinal wall was thickened by extravasation. The contents consisted of a thin half-digested mess of fodder, which was present in considerable quantity, and reddened by mixture with blood. As it seemed impossible, without tearing, to bring back to the abdomen the great-intestine involution through its entrance gate in the diaphragm, I cut it off at the place of constriction. Bordering on the tendinous and muscular part in the sternal portion of the diaphragm —15 centimetres below the opening of the vena cava and a little to the left of the median line—there was found to be a circular hole with a diameter of 6 centimetres. The edges were somewhat congested, smooth, and shining. The peritoneal surroundings of this abnormal opening were covered with villous growths, some large and some small, to the extent of an ordinary soup-plate. Of equal extent (and having been quite evidently in former connection with the part just mentioned) there existed on the outer wall of a section of the right inferior section of the colon a section partly villous, partly folded, with congested parts here and there. The point of constriction was about the middle of the folds of the transverse colon, and these seemed to have turned round on their longitudinal axis. The sanguineous infiltration of the intestinal wall extended backwards from the point of rupture for 30 centimetres to the floating colon. A large portion of the omentum could be drawn forth from the thorax as a blood-infiltrated compressed cord. The completely cicatrised rupture in the diaphragm, which might quite well have been caused by a violent effort on the part of the mare or been connected with a former case of colic, had probably existed for some years in the animal. The fact that the opening in the diaphragm was so exactly round may be owing to the special conditions of movement and extension in this muscle.

In this case there had developed local chronic inflammation of the peritoneum, which brought about a "soldering up" of that part of the colon which lies directly on the diaphragm with the diaphragm itself. How it came about that the two left folds of the colon could get through the comparatively narrow opening in the diaphragm cannot be properly explained. Considering, however, the mechanical circumstances of the case, it might be assumed that first a portion of that part of the intestine which introduces the intestinal contents—that is, the lower floating colon—slipped into the aperture, and was then filled up with newly arriving contents, whilst the

other portion of the intestine towards the anus could now discharge *its* contents. Thus the left folds of the colon were squeezed gradually through the aperture as soon as they were emptied. The aperture was so narrow that the folds of the colon could slip through only in the empty state. The contents of the embedded intestine discovered on autopsy can have got there only after the beginning of the process from the lower floating colon. A fold of the lower floating colon may also have got sunk in the aperture in the diaphragm. Thin intestinal contents probably followed, and increased the weight and tractive power of the escaped intestine. The movements of the diaphragm in breathing, and the abdominal pressure produced by the animal as it raged about in pain, probably contributed to the result, that gradually the whole moveable portion of the colon, and finally the pelvic plexus, got thrust through the aperture. At any rate, the colicky symptoms appeared only after a considerable part of the intestine had slipped through the aperture.

The mare had been for two years in the possession of her last owner. She was a capital worker, but always a small eater, and for this reason always appeared in poorer condition than the other animals in the same stable. She had a regular habit, when the stableman rubbed her down on the belly, of becoming restless and snapping at the stableman, or at one of her neighbours, or biting her manger. I do not absolutely assert that this peculiarity had anything to do with the chronic inflammation of diaphragm and colon, but I think it right to mention it in this connection.

(Vet.-Surgeon WEHRLE in the *Deutsche Thierärztliche Wochenschrift.*)

THE PATHOLOGY OF CARCINOMA.

H. RIBBERT (*Deut. med. Woch.*, November 21st, 1901) is of opinion that carcinomata are not due to a parasite, and gives his reasons for coming to this conclusion. He says that the production of carcinoma is supposed to depend on some stimulus which causes an overgrowth of cells of the epithelium. This stimulus can only call forth changes of a character which are already present, and can never produce new qualities. There is no reason, however, to presuppose that this stimulus takes the form of a parasite. The parasitic theory claims that not only is the growth caused by the organism, but that its further development depends on the continued activity of the same. The process would correspond to a kind of symbiosis, in which the living causal agent can only vegetate in epithelial cells. This would mean that the agent would damage the cells; but how a damaged cell would produce cell proliferation and not degenerative changes he cannot imagine. The term "carcinomatous degeneration" is clearly a misnomer. He points out that the parasite, once having attacked a cell, must produce its effect on that kind of cell only, and, in fact, be incapable of existing in any other cell. There would, therefore, have to be as many species of parasites as there are different kind of cells. It is difficult to believe that this can in fact be so. Again, he points out a difficulty for the parasitic theory, by saying that as soon as the original point of infection of the cancerous process is overstepped, all further growth takes place solely from the cells already composing the cancer. According to the theory, other cells of the same histological character would have to be continually infected. He thinks that when the tumour grows in the immediate neighbourhood of

cells of the same character, if it depended on a parasitic invasion, these neighbouring cells must, *per necessitate*, be also invaded, but this, in fact, does not take place. He compares the pathological characters of a new growth with those of an inflammatory growth, and claims from the comparison that the former begins as an inflammatory lesion of the connective tissue. Parasites could produce such a lesion, but they could not call forth the cell proliferation, which he explains mechanically. After following Czerny's arguments, and attempting to meet them in the light of his non-parasitic ideas, he concludes by disputing Behla's statements that cancer is an infective process, and that the increase of the disease can only be explained in this way, by stating that he doubts whether the increase actually is taking place; he considers that faulty diagnosis without the help of necropsies has much to answer for, and even if there were a real increase, this might be explained by faulty hygienic conditions, &c., without the interpolation of parasites.—(*British Medical Journal*, March 1, 1902.)

Review.

The Royal Agricultural Society of England has issued new editions of two of its well-known pamphlets by Sir George Brown, C.B., viz., "Dentition as indicative of the Age of the Animals of the Farm," and "The Structure of the Horse's Foot and the Principles of Shoeing."

The pamphlet on Dentition is the fifth edition of a work that was originally written in 1882. It describes the dentition of the horse, the ox, the sheep, and the pig, and includes in a pamphlet of sixty-four pages sixty wood engravings illustrating the various phases in the dentition of the animals mentioned. It is undoubtedly the best and most reliable work we have on the subject, and we advise each of our readers to obtain a copy of it.

The pamphlet on Horse-Shoeing, of which the new edition is the fourth since its original publication in 1888, has been to a large extent re-written, and is considerably enlarged. The new pamphlet consists of twenty-four pages, with twelve very accurate illustrations of horse's feet and horse-shoes, and is intended for the use of shoeing-smiths who are desirous of acquiring an intelligent knowledge of the anatomy of the horse's foot, and of the principles underlying their art of horse-shoeing. The work is divided into three parts, dealing with (1) the Anatomy of the Foot; (2) the Functions of the Foot; and (3) the Principles and Practice of Shoeing.

The author refers to "the great improvement which has taken place under the system of competitive horse-shoeing inaugurated by the Royal Agricultural Society and other large Agricultural Societies, in association with the Farriers' Company," and states that "in the future the work to be done lies in the direction of the diffusion of the improvements."

Notes and News.

Leeds Corporation and Tuberculous Cows.

We are glad to see that Leeds is one of the first cities in England to recognise that cowkeepers and dairy farmers, who keep cows in their borough, should have some compensation for the hardships the milk

clauses of the late Acts of Parliament compel them to undergo, and that the Sanitary Committee of Leeds Corporation agreed at their last meeting to grant compensation for the milk of all cows during the time they were being tested for tuberculosis of the udder; and further, to consider the question of purchasing such cows at a fair price for immediate slaughter.

TUBERCULOSIS OF THE SKIN FOLLOWING ACCIDENTAL INOCULATION WITH THE BOVINE TUBERCLE BACILLUS.

Ravenel, who has already published several observations upon cases of localised tuberculosis in man acquired by infection with material from bovine tuberculosis, now reports another case (*Pennsylvania Medical Bulletin*, February 1902). His patient was a veterinarian who wounded himself slightly on the wrist while performing autopsies on two cows that were the subjects of experimental tuberculosis. Four weeks later the scar became red, and a nodule formed, which was excised. Two guinea-pigs were inoculated with portions of the growth, and developed generalised tuberculosis. Tubercle bacilli were present in the nodule on section. This case and the others which have been reported prove beyond doubt that the bovine tubercle bacillus is pathogenic for man, and can produce tuberculosis when directly introduced through the skin; but they have no direct bearing upon the larger question raised by Koch, viz., whether the bovine tubercle bacillus is harmful when swallowed with tuberculous meat or milk. The experimental side of this important problem has been splendidly attacked by Pearson and Ravenel, by Smith and others, but careful clinical observation, particularly among bottle-fed infants, is necessary to aid in its solution.—*American Medicine*, March 29th, 1902.

CONJUNCTIVAL TUBERCULOSIS FOLLOWING A DOG BITE.

Stutzer (*Beitr. z. Augenheilk.*, Heft xxx.) relates the case of a five-year-old child, healthy, and of healthy parents, who received a bite from a dog which caused a lacerated wound of the right lower eyelid. In six weeks it had healed; after three months the lid appeared red and thickened, and the glands in front of the right ear were swollen. At the site of the scar a discharging ulcer developed, and the general condition deteriorated. A piece of the ulcerating tissue was removed for diagnosis; a portion of this was inserted into the anterior chamber of a rabbit, and the rest was used to determine the structure and search for tubercle bacilli. From all three points of view the diagnosis of tuberculosis was confirmed. It was positively stated that the dog had immediately before eaten the placenta of a tuberculous cow.

ARMY VETERINARY DEPARTMENT.

Extract from *London Gazette.*

WAR OFFICE, *April* 15.

Unattached.—G. Henderson, gent., M.R.C.V.S., late Sergeant, to be Vet.-Officer, with the temporary rank of Vet.-Lieut.

C.V.S. Hennessy left Cape Town for England on April 9th on board the S.S. "Dunvegan."

C.V.S. W. G. Green was discharged from hospital to duty from week ending April 5th.

CONTAGIOUS DISEASES ANIMALS ACTS, 1864 AND 1890.

SUMMARY OF RETURNS OF OUTBREAKS for the Five Weeks ending 19th April 1902.

ENGLAND AND WALES.

Swine Fever.	Anthrax.	Foot and Mouth Disease.	Glanders (including Farcy).	Rabies.	Sheep-Scab (for month of March).
Outbreaks 131 Slaughtered 512	Outbreaks 41 Attacked 71	Outbreaks 1 Attacked 117	Outbreaks 128 Attacked 228	Dogs Attacked 3 Other Animals 0 Destroyed 4	Outbreaks 181

SCOTLAND.

Outbreaks 1 Slaughtered 2	Outbreaks 27 Attacked 31	None.	Outbreaks 0 Attacked 4	None.	Outbreaks 26

IRELAND.

Outbreaks 17 Slaughtered 549	None.	None.	Outbreaks 1 Slaughtered 7	None.	Outbreaks 33

Communications, Books, Journals, &c., Received.

Agricultural Journal (Cape of Good Hope); Berliner Thierärztliche Wochenschrift; La Clinica Veterinaria (Milan); Deutsche Thierärztliche Wochenschrift; Tannoform in Veterinary Medicine (March); The Sanitary Journal; Scottish Medical and Surgical Journal; Veterinary Record; La Riforma Veterinaria; Le Mois Scientifique (Paris); L'Echo Vétérinaire (Liège); Annales de Médecine Vétérinaire (Brussels); Johns Hopkins Hospital Reports; Journal of Comparative Medicine and Veterinary Archives; Recueil de Médecine Vétérinaire; Gazette Médicale de Paris; Modern Medicine; Johns Hopkins Hospital Bulletin; Il Veterinario di Campagna (Moncalieri); Le Bulletin Vétérinaire (Orleans); Revista de Medicina Veterinaria (Bucarist); La Revista Veterinaria (Buenos Aires); Zeitschrift für Fleisch-und Milchhygiene (Berlin); Buletinul Societatii de Sciinte diu Bucuresci-Romania; Annual Report for the year 1901 of the Principal of the Royal Veterinary College to the Council of the Royal Agricultural Society of England; The Meat Trades Journal.